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# TABLE OF CONTENTS

CHAPTER		PAGE
	<b>ABSTRACT</b> .....	iv
	<b>INTRODUCTION</b> .....	1
<b>III</b>	<b>BACKGROUND OF THE PARTIAL</b> .....	7
	Introduction.....	7
	Statement of the PROBLEM.....	7
	Definition of Audience Measurement.....	7
	Definition of Superimposed Measurement.....	8
	Survey of Literature.....	8
	Survey Sampling, Capability of Space.....	8
	Theoretical Space Survey Sampling.....	10
	Use of Television in Education.....	11
	Perception of Television.....	12
<b>IV</b>	<b>DATA COLLECTION TECHNIQUE</b> .....	15
	Audience Response Data Collection.....	15
	Survey Methodologies.....	15
	Two Methodologies.....	17
	Mechanical Methodology.....	17
	Development of a New Data Collection.....	17
	System.....	19
	Instructional Response Device.....	21
	Computer Light Panel.....	22
	Use of Videotape Recording (Phase 2).....	22
	System with the VTR II.....	22
<b>V</b>	<b>PROCEDURE</b> .....	27
	Experimental Design.....	27
	Scale Selection.....	28
	Item Arrangement.....	28
	Randomization.....	28
	Pretesting.....	28
	Audience Composition.....	28
	Instructions of the Audience.....	28
	Processing of the Experiment.....	28
<b>VI</b>	<b>DATA ANALYSIS AND RESULTS</b> .....	30
	Procedures Followed for Data Analysis.....	30

	Telling Harpers and Daniels.....	80
Part	DISCUSSIONS OF THE RESULTS FOR TRAINING HYPHOSLOP.....	100
	Integration of Behavioral Findings and their Implications.....	140
	APPENDICES	
A	OPENING SCENE FROM A DELICATE BALANCE ..	161
B	OPENING SCENE FROM <u>THEIR</u> <u>LAST</u> .....	163
C	SCIENCE ONE LIVE COMPARE WITH <u>SCIENCE</u> ONE VIDEO.....	165
D	SCIENCE ONE LIVE COMPARE WITH <u>SCIENCE</u> TWO VIDEO.....	168
E	SCIENCE ONE VIDEO COMPARE WITH <u>SCIENCE</u> TWO VIDEO.....	170
F	SCIENCE THREE LIVE COMPARE WITH <u>SCIENCE</u> THREE VIDEO.....	172
G	SCIENCE THREE LIVE COMPARE WITH <u>SCIENCE</u> FOUR VIDEO.....	174
H	SCIENCE THREE VIDEO COMPARE WITH <u>SCIENCE</u> FOUR VIDEO.....	176
	REMARKS.....	178
	Works Cited.....	180
	Appendix Continued.....	182
	BIBLIOGRAPHICAL SECTION.....	184



auditory feedback during performance. This variable through a light device was able to be used in conjunction with aurally available videotape recording/playback systems. The individual devices allowed subjects to continuously respond in one of three ways (that the subjects were too close together, "No," or too far apart).

The Paired-Only Control Group Design was used to determine response to the opening vignette. Paired subjects 1 belonged to one of two groups and of equal size received a light signal. Each experimental group responded to the screen for "No," "Yes," and "Yes" on videotape. The control groups only viewed the screen on videotape. The subjects for 1 belonged to one of two groups and of equal size received a light signal had seven trials and had to respond. University of Florida student set over a computer screen.

In each vignette, three comparisons were made: the experimental group to the low screen and a videotaped screen, the experimental group to the low screen, the experimental group to the videotaped screen, and the experimental and control groups to the videotaped screen. The data were coded to see whether at the 5% level or better at the 5% level between conditions there were significant differences. To facilitate data analysis, the responses of "Yes far apart" and "Yes close together" were classified into the "Yes" or "No" category.

The Chi-square test with the Yates-Correction Factor was applied to the data of each second of the scenes being compared as a means of determining the degree of response consistency. When necessary because of the small sample size, the Fisher Exact Probability Test, the Fisher Modification, the Fisher Ratio, and a table of random numbers were used. In all six comparisons there were instances of significant differences, with instances of two or more consecutive seconds occurring in four of the comparisons. Considering the scene lengths were roughly nine minutes, it is particularly notable that in two instances out over a half a minute straight (30 seconds and 40 seconds) there were significant differences in audience response to one scene.

The findings of this study indicate the unreliability of trying to use videotape playback to teach actors and directors about interpersonal distances in live theatre,

## INTRODUCTION

This study tests experimentally the hypothesis that "audience response is interpersonal, directed at both theatre scenes and differs from audience response to videotapes of the same live theatre scenes." It utilizes the experimental results to consider the appropriateness of using videotapes as teaching actors and directors about interpersonal distance in live theatre.

An audience response device developed by the experimenter allows the experimental testing of the hypothesis. A previously-used control group design is used. University of Florida student volunteers in auditions of scenes from the experimental and control groups. The experimental group responds to performance of the opening vignette of Edward Albee's A Delicate Balance scene live and then seen on videotape. The control group responds to the videotape of the initial live scene. Each audience member decides whether the actors in each scene appear "too close to [other]," appear "OK" (at the hypothesized interpersonal distance), or appear "too far apart," making judgement responses accordingly as a loud hold, individual audience response device. These responses register as a light panel. Videotaping of that light panel allowed access to instantaneous display screen allows subsequent data



analysis of the experimental and control group responses respectively. In order to see if the results of the data analysis may be replicated, a replication of the present only control group design on the opening vignette of Lucille Fletcher's Night, Wench occurs. The same audience response device is used with University of Florida student males using as audiences of thirteen forming the experimental and control groups. Again, the responses of the experimental and control groups are analyzed.

A review of the literature in psychology, theater, television, and education shows this study to be a new undertaking. It draws upon the background of all four of these areas, particularly in terms of observations and experiments and studies which largely in Fletcher opened this. While the majority of the research leads to bear directly upon the present study, other papers needed in establishing the validity of the present method.

In the area of psychology, writings by Heinz P. Lehmann in the 1950's describe distancing scenes in animals. Edward T. Hall observed similar behavior in humans, making a major contribution when he wrote of the idea of distance scenes in human behavior. Building upon such descriptive writings, more behavioral scientists record observations and record experimental findings showing that interpersonal distance is a function of other behaviors interacting between people in a given situation at a given point in time. This interaction appears in a variety of places—from

descriptive writings in popular books and magazines to findings of experimental studies reported in professional journals.

A major breakthrough in theatrical audience response studies occurs around 1900 with the development of Hugo C. Brown's Audience Response Recorder. As a result of his instrumentation, within a few years dissertations appear on topics such as Methodology in Audience Research (Oliver, 1901), An Experimental Study and Comparison of the Responses of Men and the Responses of Women to Theatrical Audiences (Morgan, 1901), and An Experimental Study of Age as a Factor in Audience Response to the Theatre (Oliver, 1912). Since that time dissertation topics, thesis topics, and professional journal articles from across the country explore audience interest in theatre performance research. Additional audience response device developments which further to that interest. Consistently theatre research focuses on some aspect of response, such as in An Experimental Investigation of the Influence of Stage Placards Upon Audience Response (Covey, 1912), or in An Experimental Study of the Attention-Point of Certain Areas of the Stage (Lester, 1912), and as in Richard Schickel's writings about environmental theatre (1970, 1972).

Finally, in the areas of television and of education, popular magazines and books and professional books and journals discuss the role of television in education. With the development of videotape in the mid-fifties begins

experimentation with its use in the classroom. In the book *VIDEO*, *et al.* describes the use of videotaping as a means related to the present study (Hawth, Poplin, 1984, Poplin, Hawth, 1981). These articles deal with the use of videotaping of live theatre scenes as a device intended so that actors may view the playback during over-time sessions.

While the literature in the last areas evidences support that human narrative spatial behavior exists and may be recognized, that audience response studies may be validly conducted during theatre performance, and that television may not be education, none of the existing literature deals specifically with the problem of this study. The need for this investigation exists because in order to teach actors and directors about the use of space on stage, some teachers videotape scenes. Their use of videotape playback to teach actors and directors about space is based simply on faith that as audience will respond the same to the videotape as to the live scene either or not the audience witnessed the initial scene from audience seating. This study tests the validity of that assumption and applies the findings to considerations of teaching methodology.

Chapter One provides the background of the problem. It begins with an introduction which states the problem and defines terms used in the experimental hypothesis. The major portion of the chapter consists of a review of the

literature. A section on the message-receiving capabilities of space establishes the existence of attractive and repulsive spatial behavior. A section on the use of theater and space for message-receiving discusses the ways in which the use of space in theater affects the resulting production. A section on the use of television in education traces the changing role of television in the classroom with the advent of videotape. Finally, a section on the perception of television and of three dimensions concludes by questioning whether audiences will "see" the same thing on videotape as they "and" live.

Chapter Two deals with data collection methodology. In developing the rationale for the development of an audience response device, the chapter first presents related methodologies for audience response data collection. A description of the VRU 31 which the experimenter developed follows, with an explanation of its particular advantages for the present research.

Chapter Three explains the procedures used. Sections follow detailing the experimental design, scene selection, room arrangement, equipment layout, production context, audience composition, instructions of the audience, and presentation of the experiment.

Chapter Four contains the data analysis and results of the experiment. It recounts the procedures followed for the data analysis along with the testing measures and results obtained.

Chapter Five presents a determination of relevant findings and discusses the implications of the results in terms of the appropriateness of using videotapes in teaching actors and directors about interpersonal distances in live theatre.

The appendixes contain the text of the opening vignettes of the two scenes used in this study (Edward Albee's A Delicate Balance and Lucille Fletcher's Eight Days), as well as the results obtained from the statistical procedures.

The bibliography consists of two sections--one of Works Cited and one of Sources Examined. The reason for inclusion of the latter is to aid other researchers, since related works are scattered in such diverse areas

## CHAPTER I BACKGROUND OF THE PROBLEM

### INTRODUCTION

#### History of the Problem

Advances in technology with classroom use of videotape essentially feasible for aiding in instruction. This necessitated the need for evaluative research of the potential worth of videotape in the teaching of actors and directors. The present study dealt with one aspect of concern to acting and directing teachers, namely the message-receiving capabilities inherent in the actor's use of theatrical space. Some teachers videotape scenes and use their playbacks to teach acting and directing students about space, though the validity of that methodology has not been investigated. That emerged a twofold aim for this study. First, it tested experimentally the hypothesis that audience response to interpersonal distance in live theatre scenes will differ from audience response to videotaped of the same live theatre scenes. Second, it utilized the experimental results to consider the appropriateness of using videotape in teaching actors and directors about interpersonal distance in live theatre.

#### Definition of Audience Response

Audience response in this study referred to continued aesthetic judgments made by a group of university students

in a controlled experiment. These judgments were registered on a light panel through hand manipulation of a control device allowing three types of responses to the distance between two actors (too close together, ok, too far apart).

### Definition of Interpersonal Distance

For the purposes of this study, interpersonal distance consisted of the actual space unobstructively prebanded between two actors engaged in a theatre scene. The actual space consisted of the distance between two actors which could have been measured using a standardized system of measurement. Furthermore, aesthetic perception,<sup>1</sup> consisted of the way in which an audience viewed a theatre scene when asked to make judgments that involved the manner in which two actors (space) of the scene interacted with all the other media (i.e., time, sound, light) to create the form. Thus, in this study, aesthetic perception of actual space deals with audience response to approximation of the approximation of interpersonal distance in relationship with the other media of the scene.

### Review of Literature

#### Understanding Cognition of Space

Admiring and directing teachers acknowledge the strategizing cognition inherent in the actor's use of theatrical space. This cognition is well-grounded. The superlative of space in interaction has been substantiated by

<sup>1</sup>Vincent C. Smith, *Philosophy of Art* (Beverly Hills, N.J.: Presidian Hall, Inc., 1982), pp. 23-25.

research in other fields. First, research has established that norms exist for spatial distancing between human animals. Second, researchers have observed that norms exist in human spatial distancing. Third, research has affirmed that violations of the various norms can be identified. From these three points a logical progression indicated that these normative spatial behavior exists and since the norms of the norms can be identified, it should be possible to use such knowledge in teaching actors and directors, because each of these three points provides a scientific basis for what theatre artists have dealt with for hundreds of years. A few examples of representative spatial research will be discussed.

Typical of the descriptive studies were Helen P. Rediger's observations regarding spatial distancing norms between human animals. Rediger called attention to the concept of territorial behavior,<sup>3</sup> defining territory as "[...] that section of space that is defended by the non-young individual as sacred area (home, nest, etc.) and that has a definite size (within limits typical of a species) as well as a specific internal structure."<sup>4</sup> After taking into account a captain's behavior patterns, Rediger stated that allowances should be made in creating a territorial

<sup>3</sup>Helen P. Rediger, *Wild Animals in Domesticity*, trans. by Geoffrey Brown (New York: Dodd, Meador, Inc., 1961), pp. 4-14, 41-42.

<sup>4</sup>Helen P. Rediger, "The Dynamics of Territorial Behavior," in *Social Life of Birds*, ed. by Thorpe L. Soderberg (Chicago: Claitor Publishing Company, 1961), p. 26.



environment to facilitate behavioral adjustment. Rediger explained how knowledge of animals's flight reactions and critical distances plays a role in what behavior an animal may be anticipated to exhibit in given circumstances.<sup>4</sup> Rediger wrote about various spatial behaviors in lower animal forms which are reflected in human behavior.<sup>5</sup>

Human distancing behavior was seen to parallel the territorial behavior of lower animals in many respects. Anthropologist Edward T. Hall recognized such similar behavior in man when he stated: "Man has developed his territory to an almost unbelievable extent. To us trust space somewhat as we trust sex. It is there but we don't talk about it."<sup>6</sup> Since Hall's extensive descriptive writings on the role of space in human interactions, however, research in the area has flourished. Hall not only delineated distance zones associated with which is value used by humans in interaction, he also provided detailed descriptions of numerous other human spatial behaviors.

Researchers with a diversity of interests studied the experience of space in human behavior patterns. Their work suggested the pioneering work of Hall in identifying human

<sup>4</sup>Walter F. Rediger, Studies of the Psychology and Behavior of Animals: Animals in Space and Community, trans. by Geoffrey Horne (New York: McGraw-Hill Book Co., 1960), pp. 14-23, 44-47.

<sup>5</sup>Rediger, "The Evolution of . . .," pp. 34-37.

<sup>6</sup>Edward T. Hall, "Space Needs," in The Silent Language (Garden City, New York: Doubleday & Company, Inc., 1956), p. 100.

optimal range. Fiske and Markus, in a classic study, suggested the relationship between interpersonal distance and expression formation.<sup>2</sup> Their subjects (the people being watched) noted the unusual activity of the confederate (a person who appears to be a subject, but who actually is helping the experimenter with the other person) in a dyad (two people) in terms of his friendliness, aggressiveness, angry valence, and disapproval. The distances of the confederate from the subjects varied by ten foot intervals from ten feet to eight feet. The research of Fiske and Markus indicated that subjects noted interpersonal distance differently when the distance increased, except that one distance noted closest to the subject also received two more valences for social valence. The study indicated that an interaction between interpersonal distance and expression formation exists.

A description of how a group is spontaneously behaved in the Kennedy's presence after he received the 1960 Presidential nomination provided yet another look at the interrelationship between expressions and interpersonal distances.

Kennedy (1960) described the steps of the eight-level process to a crowd where his brother Bobby and brother-in-law Robert F. Kennedy were standing, waiting for him. The subject in the room stepped forward on average 30 feet from them when they talked. A distance of perhaps thirty feet

<sup>2</sup>John L. Fiske and Lee R. Markus, "Interpersonal Distance and Expression Formation," in *Journal of Experimental Psychology*, Vol. 68, No. 2 (June, 1970), 270-287.

represented that time was, but it was negligible. They stood apart, three short rows of long-established seats, and watched him. . . . then, one by one, in an order determined by the quality of his own courtesy and judgment, he let them all congratulate him. Yet no one would give the little open distance between him and them their right. Because there was that thin reputation about him, and the knowledge they were there got on his person but on his claims. They could come by invitation only, for they might be a President of the United States.

This report, like the study by Feinhardt and Schwartz, lent support to Hall's claim that women are more distancing than men.

Research affirmed that spatial variations of interactive behavior can be identified. A study by Matthews, Hall, and Houtman<sup>5</sup> is one of many finding this to be true. They determined whether spatial norms for schizophrenia differed from the spatial norms of others. Their only buffer zone (the amount of space a person requires to be comfortable) study found that the schizophrenic group stood from an object at a significantly greater mean distance than did the non-schizophrenic group. The schizophrenics considered a person as being approachable from eight sides and as being able to approach with any of the eight sides. From analyzing human approach data, graphs of distances plotted around a top view of a human figure indicated the subjects,

<sup>5</sup>Thomas J. Matthews, The Making of the President 1992 (New York: Pocket Books, 1991), p. 201.

<sup>6</sup>David J. Matthews, Donald E. Hall, and John G. Schwartz, "Body Buffer Zone," in Archives of Sexual Psychiatry, Vol. 11 (1994), 431-444.

old male non-schizophrenics, placed less distance between themselves and a female than between themselves and a male. In terms of rating their preferred distance between themselves and others, schizophrenics preferred larger body buffer zones than non-schizophrenics.

Control observations, like scientific investigations, is a method of recognizing behavioral norm deviations. From this noted over half a century ago. "My values then differ from those performed by us habitually similar to the behavior as rudimentary or objectionable, according to the functional norm that accompanies it."<sup>12</sup> From identified a relationship existing between actions and emotional tone, implying that of deviations from the normative action occurred, a deviation in emotional tone occurred to counteract the effect of changed behavior or else the new action appeared out of place. This suggests the idea that interpersonal distance is only one component of human behavior among many, which are equally interesting.

An equilibrium appears to exist among these interacting behaviors. A change in one type of behavior causes adjustments in other behaviors. Albert E. Garfield and Norma Ashcraft are speaking as a function of functioning, activity, and the environment.<sup>13</sup> Michael Argyle and Jack

Continued...

<sup>12</sup>From *From Anthropology and Social Life* (New York: W.W. Norton & Company, Inc., Publishers, 1938), p. 101.

<sup>13</sup>Albert E. Garfield and Norma Ashcraft, *Human Development*, New York: Holt Rinehart & Winston, 1962, p. 101, 102, 119-121, 125-126, 127-128, 129-130, 131-132, 133-134, 135-136, 137-138, 139-140, 141-142, 143-144, 145-146, 147-148, 149-150, 151-152, 153-154, 155-156, 157-158, 159-160, 161-162, 163-164, 165-166, 167-168, 169-170, 171-172, 173-174, 175-176, 177-178, 179-180, 181-182, 183-184, 185-186, 187-188, 189-190, 191-192, 193-194, 195-196, 197-198, 199-200, 201-202, 203-204, 205-206, 207-208, 209-210, 211-212, 213-214, 215-216, 217-218, 219-220, 221-222, 223-224, 225-226, 227-228, 229-230, 231-232, 233-234, 235-236, 237-238, 239-240, 241-242, 243-244, 245-246, 247-248, 249-250, 251-252, 253-254, 255-256, 257-258, 259-260, 261-262, 263-264, 265-266, 267-268, 269-270, 271-272, 273-274, 275-276, 277-278, 279-280, 281-282, 283-284, 285-286, 287-288, 289-290, 291-292, 293-294, 295-296, 297-298, 299-300, 301-302, 303-304, 305-306, 307-308, 309-310, 311-312, 313-314, 315-316, 317-318, 319-320, 321-322, 323-324, 325-326, 327-328, 329-330, 331-332, 333-334, 335-336, 337-338, 339-340, 341-342, 343-344, 345-346, 347-348, 349-350, 351-352, 353-354, 355-356, 357-358, 359-360, 361-362, 363-364, 365-366, 367-368, 369-370, 371-372, 373-374, 375-376, 377-378, 379-380, 381-382, 383-384, 385-386, 387-388, 389-390, 391-392, 393-394, 395-396, 397-398, 399-400, 401-402, 403-404, 405-406, 407-408, 409-410, 411-412, 413-414, 415-416, 417-418, 419-420, 421-422, 423-424, 425-426, 427-428, 429-430, 431-432, 433-434, 435-436, 437-438, 439-440, 441-442, 443-444, 445-446, 447-448, 449-450, 451-452, 453-454, 455-456, 457-458, 459-460, 461-462, 463-464, 465-466, 467-468, 469-470, 471-472, 473-474, 475-476, 477-478, 479-480, 481-482, 483-484, 485-486, 487-488, 489-490, 491-492, 493-494, 495-496, 497-498, 499-500, 501-502, 503-504, 505-506, 507-508, 509-510, 511-512, 513-514, 515-516, 517-518, 519-520, 521-522, 523-524, 525-526, 527-528, 529-530, 531-532, 533-534, 535-536, 537-538, 539-540, 541-542, 543-544, 545-546, 547-548, 549-550, 551-552, 553-554, 555-556, 557-558, 559-560, 561-562, 563-564, 565-566, 567-568, 569-570, 571-572, 573-574, 575-576, 577-578, 579-580, 581-582, 583-584, 585-586, 587-588, 589-590, 591-592, 593-594, 595-596, 597-598, 599-600, 601-602, 603-604, 605-606, 607-608, 609-610, 611-612, 613-614, 615-616, 617-618, 619-620, 621-622, 623-624, 625-626, 627-628, 629-630, 631-632, 633-634, 635-636, 637-638, 639-640, 641-642, 643-644, 645-646, 647-648, 649-650, 651-652, 653-654, 655-656, 657-658, 659-660, 661-662, 663-664, 665-666, 667-668, 669-670, 671-672, 673-674, 675-676, 677-678, 679-680, 681-682, 683-684, 685-686, 687-688, 689-690, 691-692, 693-694, 695-696, 697-698, 699-700, 701-702, 703-704, 705-706, 707-708, 709-710, 711-712, 713-714, 715-716, 717-718, 719-720, 721-722, 723-724, 725-726, 727-728, 729-730, 731-732, 733-734, 735-736, 737-738, 739-740, 741-742, 743-744, 745-746, 747-748, 749-750, 751-752, 753-754, 755-756, 757-758, 759-760, 761-762, 763-764, 765-766, 767-768, 769-770, 771-772, 773-774, 775-776, 777-778, 779-780, 781-782, 783-784, 785-786, 787-788, 789-790, 791-792, 793-794, 795-796, 797-798, 799-800, 801-802, 803-804, 805-806, 807-808, 809-810, 811-812, 813-814, 815-816, 817-818, 819-820, 821-822, 823-824, 825-826, 827-828, 829-830, 831-832, 833-834, 835-836, 837-838, 839-840, 841-842, 843-844, 845-846, 847-848, 849-850, 851-852, 853-854, 855-856, 857-858, 859-860, 861-862, 863-864, 865-866, 867-868, 869-870, 871-872, 873-874, 875-876, 877-878, 879-880, 881-882, 883-884, 885-886, 887-888, 889-890, 891-892, 893-894, 895-896, 897-898, 899-900, 901-902, 903-904, 905-906, 907-908, 909-910, 911-912, 913-914, 915-916, 917-918, 919-920, 921-922, 923-924, 925-926, 927-928, 929-930, 931-932, 933-934, 935-936, 937-938, 939-940, 941-942, 943-944, 945-946, 947-948, 949-950, 951-952, 953-954, 955-956, 957-958, 959-960, 961-962, 963-964, 965-966, 967-968, 969-970, 971-972, 973-974, 975-976, 977-978, 979-980, 981-982, 983-984, 985-986, 987-988, 989-990, 991-992, 993-994, 995-996, 997-998, 999-1000, 1001-1002, 1003-1004, 1005-1006, 1007-1008, 1009-1010, 1011-1012, 1013-1014, 1015-1016, 1017-1018, 1019-1020, 1021-1022, 1023-1024, 1025-1026, 1027-1028, 1029-1030, 1031-1032, 1033-1034, 1035-1036, 1037-1038, 1039-1040, 1041-1042, 1043-1044, 1045-1046, 1047-1048, 1049-1050, 1051-1052, 1053-1054, 1055-1056, 1057-1058, 1059-1060, 1061-1062, 1063-1064, 1065-1066, 1067-1068, 1069-1070, 1071-1072, 1073-1074, 1075-1076, 1077-1078, 1079-1080, 1081-1082, 1083-1084, 1085-1086, 1087-1088, 1089-1090, 1091-1092, 1093-1094, 1095-1096, 1097-1098, 1099-1100, 1101-1102, 1103-1104, 1105-1106, 1107-1108, 1109-1110, 1111-1112, 1113-1114, 1115-1116, 1117-1118, 1119-1120, 1121-1122, 1123-1124, 1125-1126, 1127-1128, 1129-1130, 1131-1132, 1133-1134, 1135-1136, 1137-1138, 1139-1140, 1141-1142, 1143-1144, 1145-1146, 1147-1148, 1149-1150, 1151-1152, 1153-1154, 1155-1156, 1157-1158, 1159-1160, 1161-1162, 1163-1164, 1165-1166, 1167-1168, 1169-1170, 1171-1172, 1173-1174, 1175-1176, 1177-1178, 1179-1180, 1181-1182, 1183-1184, 1185-1186, 1187-1188, 1189-1190, 1191-1192, 1193-1194, 1195-1196, 1197-1198, 1199-1200, 1201-1202, 1203-1204, 1205-1206, 1207-1208, 1209-1210, 1211-1212, 1213-1214, 1215-1216, 1217-1218, 1219-1220, 1221-1222, 1223-1224, 1225-1226, 1227-1228, 1229-1230, 1231-1232, 1233-1234, 1235-1236, 1237-1238, 1239-1240, 1241-1242, 1243-1244, 1245-1246, 1247-1248, 1249-1250, 1251-1252, 1253-1254, 1255-1256, 1257-1258, 1259-1260, 1261-1262, 1263-1264, 1265-1266, 1267-1268, 1269-1270, 1271-1272, 1273-1274, 1275-1276, 1277-1278, 1279-1280, 1281-1282, 1283-1284, 1285-1286, 1287-1288, 1289-1290, 1291-1292, 1293-1294, 1295-1296, 1297-1298, 1299-1300, 1301-1302, 1303-1304, 1305-1306, 1307-1308, 1309-1310, 1311-1312, 1313-1314, 1315-1316, 1317-1318, 1319-1320, 1321-1322, 1323-1324, 1325-1326, 1327-1328, 1329-1330, 1331-1332, 1333-1334, 1335-1336, 1337-1338, 1339-1340, 1341-1342, 1343-1344, 1345-1346, 1347-1348, 1349-1350, 1351-1352, 1353-1354, 1355-1356, 1357-1358, 1359-1360, 1361-1362, 1363-1364, 1365-1366, 1367-1368, 1369-1370, 1371-1372, 1373-1374, 1375-1376, 1377-1378, 1379-1380, 1381-1382, 1383-1384, 1385-1386, 1387-1388, 1389-1390, 1391-1392, 1393-1394, 1395-1396, 1397-1398, 1399-1400, 1401-1402, 1403-1404, 1405-1406, 1407-1408, 1409-1410, 1411-1412, 1413-1414, 1415-1416, 1417-1418, 1419-1420, 1421-1422, 1423-1424, 1425-1426, 1427-1428, 1429-1430, 1431-1432, 1433-1434, 1435-1436, 1437-1438, 1439-1440, 1441-1442, 1443-1444, 1445-1446, 1447-1448, 1449-1450, 1451-1452, 1453-1454, 1455-1456, 1457-1458, 1459-1460, 1461-1462, 1463-1464, 1465-1466, 1467-1468, 1469-1470, 1471-1472, 1473-1474, 1475-1476, 1477-1478, 1479-1480, 1481-1482, 1483-1484, 1485-1486, 1487-1488, 1489-1490, 1491-1492, 1493-1494, 1495-1496, 1497-1498, 1499-1500, 1501-1502, 1503-1504, 1505-1506, 1507-1508, 1509-1510, 1511-1512, 1513-1514, 1515-1516, 1517-1518, 1519-1520, 1521-1522, 1523-1524, 1525-1526, 1527-1528, 1529-1530, 1531-1532, 1533-1534, 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1899-1900, 1901-1902, 1903-1904, 1905-1906, 1907-1908, 1909-1910, 1911-1912, 1913-1914, 1915-1916, 1917-1918, 1919-1920, 1921-1922, 1923-1924, 1925-1926, 1927-1928, 1929-1930, 1931-1932, 1933-1934, 1935-1936, 1937-1938, 1939-1940, 1941-1942, 1943-1944, 1945-1946, 1947-1948, 1949-1950, 1951-1952, 1953-1954, 1955-1956, 1957-1958, 1959-1960, 1961-1962, 1963-1964, 1965-1966, 1967-1968, 1969-1970, 1971-1972, 1973-1974, 1975-1976, 1977-1978, 1979-1980, 1981-1982, 1983-1984, 1985-1986, 1987-1988, 1989-1990, 1991-1992, 1993-1994, 1995-1996, 1997-1998, 1999-2000, 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010, 2011-2012, 2013-2014, 2015-2016, 2017-2018, 2019-2020, 2021-2022, 2023-2024, 2025-2026, 2027-2028, 2029-2030, 2031-2032, 2033-2034, 2035-2036, 2037-2038, 2039-2040, 2041-2042, 2043-2044, 2045-2046, 2047-2048, 2049-2050, 2051-2052, 2053-2054, 2055-2056, 2057-2058, 2059-2060, 2061-2062, 2063-2064, 2065-2066, 2067-2068, 2069-2070, 2071-2072, 2073-2074, 2075-2076, 2077-2078, 2079-2080, 2081-2082, 2083-2084, 2085-2086, 2087-2088, 2089-2090, 2091-2092, 2093-2094, 2095-2096, 2097-2098, 2099-2100, 2101-2102, 2103-2104, 2105-2106, 2107-2108, 2109-2110, 2111-2112, 2113-2114, 2115-2116, 2117-2118, 2119-2120, 2121-2122, 2123-2124, 2125-2126, 2127-2128, 2129-2130, 2131-2132, 2133-2134, 2135-2136, 2137-2138, 2139-2140, 2141-2142, 2143-2144, 2145-2146, 2147-2148, 2149-2150, 2151-2152, 2153-2154, 2155-2156, 2157-2158, 2159-2160, 2161-2162, 2163-2164, 2165-2166, 2167-2168, 2169-2170, 2171-2172, 2173-2174, 2175-2176, 2177-2178, 2179-2180, 2181-2182, 2183-2184, 2185-2186, 2187-2188, 2189-2190, 2191-2192, 2193-2194, 2195-2196, 2197-2198, 2199-2200, 2201-2202, 2203-2204, 2205-2206, 2207-2208, 2209-2210, 2211-2212, 2213-2214, 2215-2216, 2217-2218, 2219-2220, 2221-2222, 2223-2224, 2225-2226, 2227-2228, 2229-2230, 2231-2232, 2233-2234, 2235-2236, 2237-2238, 2239-2240, 2241-2242, 2243-2244, 2245-2246, 2247-2248, 2249-2250, 2251-2252, 2253-2254, 2255-2256, 2257-2258, 2259-2260, 2261-2262, 2263-2264, 2265-2266, 2267-2268, 2269-2270, 2271-2272, 2273-2274, 2275-2276, 2277-2278, 2279-2280, 2281-2282, 2283-2284, 2285-2286, 2287-2288, 2289-2290, 2291-2292, 2293-2294, 2295-2296, 2297-2298, 2299-2300, 2301-2302, 2303-2304, 2305-2306, 2307-2308, 2309-2310, 2311-2312, 2313-2314, 2315-2316, 2317-2318, 2319-2320, 2321-2322, 2323-2324, 2325-2326, 2327-2328, 2329-2330, 2331-2332, 2333-2334, 2335-2336, 2337-2338, 2339-2340, 2341-2342, 2343-2344, 2345-2346, 2347-2348, 2349-2350, 2351-2352, 2353-2354, 2355-2356, 2357-2358, 2359-2360, 2361-2362, 2363-2364, 2365-2366, 2367-2368, 2369-2370, 2371-2372, 2373-2374, 2375-2376, 2377-2378, 2379-2380, 2381-2382, 2383-2384, 2385-2386, 2387-2388, 2389-2390, 2391-2392, 2393-2394, 2395-2396, 2397-2398, 2399-2400, 2401-2402, 2403-2404, 2405-2406, 2407-2408, 2409-2410, 2411-2412, 2413-2414, 2415-2416, 2417-2418, 2419-2420, 2421-2422, 2423-2424, 2425-2426,

Davis's research showed a direct correlation between eye contact and distance as functions of affiliation or intimacy.<sup>12</sup> These work revealed that eye contact decreased as proximity increased. As Argyle suggested several years later:

... eye contact is one of several components of "intimacy", along with physical proximity, "harmless" topics, smiling and tone of voice. If we suppose that there is an overall equilibrium for intimacy, it follows that when one of the component elements is disturbed there will be some compensatory change among the others to preserve the equilibrium.<sup>13</sup>

A study of compensatory reactions to applied interaction<sup>14</sup> indicated that deviations from normative behavior of one person influenced subsequent behavior of the other person. The subjects in the study adjusted their behavior to the behavior of the confederates to achieve an equilibrium. A study by Marshall, Fisher, and Brandt<sup>15</sup> investigated the relationship between an aspect of context (intimacy) and two other factors (sex and distance). That study showed that subjects at both the "near" and "far" interpersonal distance in same-sex and opposite-sex dyads perceived lower

<sup>12</sup>Michael Argyle and Janet Dean, "Eye contact, Distance and Affiliation," in Sociometry, Vol. 34 (1967), 181-184.

<sup>13</sup>Michael Argyle, The Psychology of Interpersonal Behavior (Baltimore, Maryland: University Park, 1975), p. 172.

<sup>14</sup>G. J. Neumann, E. Sullivan, and J. Brandt, "Compensatory Reactions to Applied Interactions," in Sociometry, Vol. 34 (1971), 123-124.

<sup>15</sup>Harold A. Marshall, Laura D. Fisher, and John W. Brandt, "Personal Factors in Social Communication," in Journal of Experimental and Social Psychology, Vol. 11, No. 1 (1975), 12-14.

speaking interaction than subjects in opposite-sex or experimenter dyads. In all four possible sex combinations of dyads, increases in intimacy reflected increases in interpersonal distance. From studies such as these, interpersonal distancing could be seen to be related to other behavior. It contributed to the content of messages sent and received.

### Theatrical Space Training/Reading

Acting and directing involves recognizing that the use of theatrical space by actors conveys messages to the audience. Directors are taught the importance of pictorialization and composition. Pictorialization in this study refers to the conceptual dramatic placement of characters in the stage picture as a means suggestive of their interpersonal relationships. Composition in this study refers to the technique of achieving pictorialization.<sup>16</sup> A common method of directional control of composition is known as blocking. Blocking in this study refers to the instruction of actors as to where on stage to position themselves in relationship to each other and to their environment. Actors are taught the importance of responding to the director's blocking instructions and the techniques which allow them to develop a sense of when they are in the right place in relationship to their total stage environment.

<sup>16</sup> Alexander Dean, *Principles of Film Directing* (New York: Holt, Rinehart and Winston, Inc., 1965), pp. 309, 315.

Directing texts sometimes disagree as to the specificity of guidelines needed, but they tend to agree that participation and cooperation are essential to a study of directing. They realize that the handling of space affects the production as a whole. Francis Hedge, for example, writes that "the real values of small-space occupation are quite different from those of large-space occupation."<sup>17</sup> He also discusses the effect of distances between two actors: He points out that variations in distance between actors show operative forces between them: "Thus, two actors may play at the extremes of the stage or very close together, with each occupation having explicit meanings."<sup>18</sup> According to Hedge, actors closer than six feet together enter into a dramatic competition which should find resolution in either an action of love such as an embrace or in an action of hate such as a fight.

Samuel Golden describes situations in actors in close proximity.<sup>19</sup> He sees close proximity between actors as an indication in the audience of character is needed. For an example, Golden used a series of pictures of lovers on a park bench. When the lovers quarreled or stopped to confide, they moved to opposite ends of the bench and behaved ~~in a certain way~~.

<sup>17</sup> Francis Hedge, *Play Techniques*, Maxwell Communication and Drama Department (1911), 23. Frederick Hall, Ed., 1911, p. 190.

<sup>18</sup> 1914, 118.

<sup>19</sup> Samuel Golden, The Stage in Action (New York: Applause-Gentry-Corbin, 1917), pp. 111-113.

and India, and elsewhere. When the actors maintain their differences, they stand close together on the bench, almost appearing as one character. They reflected their accord by "putting together" literally as well as figuratively. Follen suggests that to heighten the sense of strong accord that is a competition, a director should clearly place opposing sides well apart on stage by either increasing their horizontal distance apart by placing them on opposite sides of the stage or by increasing their vertical distance apart by placing them on different levels. He states: "The greater amount of space there is between them, the greater will seem to be the break of accord."<sup>20</sup>

Two researchers examined trends stated in directing texts as to if what they prescribed held up in actuality. The work of Wade Chester Curry fell into this category. Curry explored whether audiences exhibited a greater emotional response when scenes occurred downstage than when they occurred upstage.<sup>21</sup> With audience rating on a five-point scale the "mood" (the degree of emotional response) of three scenes, Curry found no significant difference in the mood rating of one of the scenes when played upstage as opposed to when played downstage. Curry concluded: "The effect of stage area upon audience response is

<sup>20</sup>ibid., 111.

<sup>21</sup>Wade Chester Curry, *An Experimental Investigation of the Influence of Stage Placement Upon Audience Response*, M.A. thesis, University of Pittsburgh, 1919. Pp. 1-48; 11, 21, 32-33.



probably less important than research on stage area, the subject would lead us to believe."<sup>22</sup>

Ten years later the work of Gilbert Neil Lester fell into this same category. Lester investigated the attention-value of stage right versus stage left.<sup>23</sup> The audience viewed isolated performances performed by an actor in the stage left area and an actor in the stage right area. Each performance occurred simultaneously. A 16 mm. camera recorded the direction of vision of the audience. Other measures of audience attention used included intensity of audience response, reactions, opinions, and references to actors. Lester stated that "The hypothesis of this study: 'The attention-value of the stage right area is stronger than that of the stage left area,' was not substantiated by the measured relationships."<sup>24</sup> These studies threw doubt upon certain specific trends postulated in the past. They served to remind people of the danger of following prescriptive suggestions made by departing heads regarding stage without considering their validity.

Some researchers applied research from other fields to theatre. An example of this approach may be seen in the work of John G. Bushnell and Clarence W. Joffe. Drawing

<sup>22</sup>Ibid., p. 1.

<sup>23</sup>Gilbert Neil Lester, An Experimental Study of the Attention-Value of Certain Areas of the Stage. M.A. Thesis, University of Pittsburgh, 1943.

<sup>24</sup>Ibid., p. 87.

upon findings in the field of psychology, using then upon the body-buffer zone work of Berrowitz, Huff, and Strutton, they applied relevant data to a study of law service directors created corporations.<sup>23</sup> Their study measured the effects of directors' body-buffer zones on their work. Students without directing training who were in various sections of an Introduction to Theories class served as subjects. Application of the methodology described by Berrowitz, Huff, and Strutton<sup>24</sup> yielded the body-buffer zone for each subject. As each subject knicked a pair of male and female actors, the experimenters measured distance data logs of each dyad. The data of the body-buffer zone of each individual compared with the distance data obtained when they knicked dyads showed the relationship between the body-buffer zone of certain directors and proximity (spatial relationships) on knicking. The findings indicated that there was not a significant correlation between the buffer zone zones of males and the proximate dimensions of knicking corporations. With females, however, a positive and significant correlation was found between their buffer zones and the distance dimension of knicking corporations.

<sup>23</sup>John C. Macdonell and Clarence W. Sahr, "Body-Buffer Zones and Proximity in Knicking," in Empirical Research in Therapy, Vol. 3, No. 1 (Winter, 1970), 17-40.

<sup>24</sup>Berrowitz, Huff, and Strutton, ibid.

In actual practice, directors use a variety of means of communicating to actors what desired behavior is needed to be in accord with the other production media. A common method is to demonstrate the behavior they desire to elicit from the actors. There are, of course, differences of opinion with regard to this method. Harold Clerman, a respected professional director, expressed his concern with the practice:

I believe such demonstrational direction. Yet they are inevitably confined to. The point is demonstrated in an actor who something as to be done as that it leads to confusion on the actor's part. If the director is a poet rather the words may be grotesque. If he is an excellent actor--Stanislavsky, Meyerhold, Reinhardt, for example--the actor himself "imitated," especially in order by the director's demonstration.<sup>21</sup>

At issue in Mr. Clerman's view, for a director to have actor and demonstrate hardly seems a desirable solution. Most directors, whether they demonstrate behavior or not, rely on using a combination of several methods, including acting metaphorically or paraphrasing to convey their desires. Some directors draw upon such varied sources as poetry, music, paintings, sculpture, and photography to convey much or more. Still others discuss carefully, which movement and action in infinite detail, and have actors do improvisations. Sometimes continuously seek further methods of facilitating communication with actors regarding their use of stage space.

<sup>21</sup>Harold Clerman, On Directing (New York: The Phoenix Company, 1978), p. 113.

### The Use of Television in Education

The development of television provided one possible way of facilitating such communication. With the advent of videotape in the mid forties, it became feasible to experiment with its use in the classroom. Television provided a teaching tool and an opportunity for pupil self-evaluation. In the area of history, structural replication on videotape was generally considered to hold in the learning process. At the University of Texas at El Paso, for example, Charles W. Taylor offered his introductory students studying Shakespeare an option of either watching a film or reading their paper on portrait painting, in a videotape project.<sup>24</sup> One group of students selecting the videotape project of film produced scenes they selected from Shakespeare. They watched production experts perform and watching their work until satisfied with the product. The entire class and the instructor viewed the finished product, offering comments, making suggestions, and asking questions. Taylor explained:

Especially, the students have learned a great deal about Shakespeare and drama in the process of their experience. New scenes are structured, new actors and characters are developed, new poetic dialogue written and in fact, the very essence of Shakespeare's work, in a sense, the work of man.<sup>25</sup>

<sup>24</sup>Charles W. Taylor, "The Videotape Or Not To Videotape," in *Audio Visual Instruction*, 22 (Summer, 1971), 22-24, 22-23.

<sup>25</sup>*Ibid.* - 23.

Another typical student-related use of videotape was to record tryouts for productions. Piedmont Valley Community College, for example, recorded tryouts for "Spoken River Anthology." After reading a speech for the director several times and receiving suggestions, approximately two minute records of each student's audition were made on videotape. After the recording of all actors at tryouts, playback began, allowing each actor the opportunity for self-evaluation. "This experience was appreciated by the actors who could then evaluate themselves both individually and in the perspective of all the actors who tried out."<sup>20</sup>

If particular relevance in the present study was the use of playback to assist communication between directors and actors in diagnosis of performance behavior, audio taping of live performances allowed instructional use of playback during critique sessions.<sup>21</sup> Michael Fagelson wrote of doing that with play directed:<sup>22</sup> He and Robert Gardner then tried using videotaping in the same fashion.<sup>23</sup>

<sup>20</sup>Ray Meyer, "An Innovation: Televised Reel with Spoken Tapes," in EDUCATIONAL JOURNAL, Vol. 18 (September, 1977), 118.

<sup>21</sup>David C. Smith, Jr., "Time for Taping," in Educational Theater Journal, Vol. 24, No. 3 (Oct., 1971), 207-208.

<sup>22</sup>Michael B. Fagelson, "The Tape Recorder for Dramatic Children," in Educational Theater Journal, Vol. 18 (Oct.) 60-62.

<sup>23</sup>Michael B. Fagelson and Robert L. Gardner, "Innovations in High School Theater: A Symposium," in "Innovating Plays with Video Tape," in The Speech Teacher, Vol. 14, No. 1 (March, 1971), 87-90.

This constituted a step forward, for although motion tapes added to critique sessions, the discussion of the visual elements of production, the actors had to rely on their memories. Use of videotapes eliminated this problem. Pagliaro and Gauthier used videotapes to critique "stage pictures, grouping and blocking, movement, stage business, posture and gesture, facial expression, use of the body, characterization, focus and relationships of characters, technical unity, and scene and dialogue."<sup>24</sup> The next step was to use the videotape under discussion. Pagliaro and Gauthier were interested in what teachers thought of the possible use of videotaping in their school programs. The following response typifies the answers of the teachers:

It would be extremely useful in the teaching of stage movement. It is easier to show a student what you are talking about than it is to try to explain. It is better when the student can himself than it is to use an explanation given by the teacher. . . . I would also like to use it for studying opportunities in movement, posture, and gesture.<sup>25</sup>

#### Production of Television

While the use of videotape seems ideal for teaching actors and directors about space in live theatre, this belief is based on faith that audience perception of television does not differ from audience perception of live theatre. Whether or not this is true seems questionable.

<sup>24</sup>Hubert Gauthier and Rudolph Pagliaro, "Videotape as a Stage Resource," in *Amateur Dramatic Journal*, Vol. 15 Dec. (1961), 1144.

<sup>25</sup>Ibid., 1144.

For instance, when viewing televised theatre a person is filling in part of the visual information through a process known as closure. While a television picture consists of a screen showing two of four of varying intensities of light, the audience is aware for the most part that data of light rather than solid forms are being seen. Humans are conditioned to organize informational pieces into wholeness; thus, the audience members automatically fill in the missing elements, making a complete picture. This closure process does not mean that an audience does love theatre. Another consideration is that in viewing live theatre scenes the audience is using three-dimensionality, while in viewing the videotape the information is seen on a two-dimensional television screen.

It seems possible that audience response to a videotape of a live theatre scene will be influenced by prior exposure to the live theatre scene. Viewers may or may not "see" the same thing on videotape as they see live. This study investigates the methodological principles of interpersonal distance in drafts of scenes as live scenes and on videotapes of these scenes. It uses the experimental results to consider the appropriateness of using videotapes in teaching actors and directors about interpersonal distance in live theatre.

## CHAPTER 11 11.1 COLLECTION METHODS

### Self-Report, Interview, Brain Collection

Oral, written, and mechanical data collect in procedures were considered for their potential use or applicability in comparing audience response to integrated and distance in love theatre scenes with audience response to videotapes of the same theatre scenes. With some procedures, such as when audience members respond to a questionnaire, data were obtained with the audience's knowledge or control. In other procedures, such as if a hidden camera photographed every physical movement of an audience, the audience was not aware of or in control of the data being obtained. The majority of methods examined proved unsuitable for the present study, particularly those mechanical methods where data was obtained without the knowledge or control of the audience and those oral and written methods which appeared useful only before or after a performance. While they will be discussed to provide a context for audience response research, it was the mechanical methods occurring with audience knowledge and control which most influenced the development of a new data collection system used in the present study.



### Written Methodologies

The most common written methods include spontaneous mail returns, audience surveys and questionnaires, logged information and details, and responses to shift-of-opinion and rating scales. Spontaneous mail returns, for example, provide a common source of information for a profession campers following a performance. Audience surveys and questionnaires deal with anything even that children prefer to children's theatre<sup>1</sup> to more detailed studies about particular aspects of professional. Logged information and details (used by compiler's of professional ratings) are wary of having audiences keep track of their noted study. Shift-of opinion scales (where an earlier response of an audience member is compared with a later response) were used by Albert Farber to study the influence of scattered versus compact seating on audience response.<sup>2</sup> Rating scales provide graduated continuums between extremes along which responses may be registered. Sometimes a combination of these methods is employed in a study, while in other research, only a single method is needed. Although "paper and pencil" studies prove particularly useful for pre and post experiment measurement of audience states, they are

<sup>1</sup>Yvonne Isaac, "What Do Children Want in Children's Theatre?" in *Learning, Childhood and Youth*, Issue 1 (University Press, 1974), 27-33 & 40-41n.

<sup>2</sup>Albert L. Farber, "The Influence of Scattered Versus Compact Seating on Audience Response," in *British Psychological Journal*, Vol. 11, No. 1 (June, 1942), 144-145.

not generally used during a performance. Verbal interpretation of a writing instrument requires conscious thought which could detract from authentic perception of the performance.

#### Oral Methodologies

Oral methods of audience response data collection generally take the form of answers to specific questions, answers to personal interviews, telephone replies to surveys, voluntary or requested testimonials, group discussi-  
ons, and verbal evaluations. These standard oral methods preclude usage during performances. Since actually accepting oral responses during events tend to be limited to simple asked or exclamation remark forms, the possibilities for use of this method during performances are virtually nil.

#### Mechanical Methodologies

Mechanical methods which gather data without the audience's knowledge or control seem to provide primarily physiological measurements of responses. These methods may be as simple as taking audience blood pressure readings or as complex as using an electromagnetic instrument order to monitor audience member's gross body movements.<sup>2</sup> A wide variety of physiological measuring devices are available.

Other mechanical methods exist which aid in audience response studies conducted during performances by allowing

<sup>2</sup>Harold A. Kretzinger, "An Experimental Study of Gross Body Movement as an Index to Audition Interest," in Journal of Music Therapy, Vol. 14, No. 4 (Nov., 1971), 344-348.

data collection with audience knowledge or control. One place commercially where such mechanical influence response devices have found acceptance is in the television programming field. Television networks ABC and NBC have pilot programs tested by ARI Market Research, Inc. using devices which have been installed in a Los Angeles theatre. Each seat in the theatre, Premier House, is equipped with non-keyed dials in which audience members register responses. The collected data ultimately appears on oscillograph-like charts for analysis. Likewise, CBS uses mechanical devices to register audience response to its Theatre House Home Theatre film-struck videos and color television pilot programs, with each individual continuously registering its response on push button devices from which the results are transferred to paper.<sup>4</sup>

The commercially marketed mechanical response device known as the Graphic Level Recorder has been accepted as a valid research instrument in a variety of disciplines. The device consists of pens which register audience responses on graph paper that is moving at a continuous rate underneath the pens. Each pen registers a straight line on the graph paper unless the push button connected to that pen is depressed. With the depression of the button, the corresponding pen registers a deviation from its neutral

<sup>4</sup>Paul Shilover, "TV Programming Research," in *TV Book*, The National Television Book, ed. by Judy Pineson (New York: National Broadcasting Company, 1971), p. 308.

point as straight line. But, with the release of the depressed button does the pen return to its normal listening position. This is useful device for recording continuous responses during performance. It is not a dependable one, its major weakness being the frequency and unpredictable timing with which the ink pen clog.

A variety of mechanical equipment in the University of Iowa Theatre made possible continuous response studies conducted during performance. One modification used to record group audience responses consisted of incorporating two Emerson-Aragon Graphia Recorders, toggle switches for each audience member, a tape recorder connected to a stage microphone, a timing device, and a power control unit.<sup>6</sup> A remote operation mechanism recorded individual audience response data.<sup>7</sup> Called the Motor Audience-Response Recorder,<sup>8</sup> which Norman C. Meier, its developer, is consisted of a lap-held recorder which had a synchronous motor pushing over a strip of wax-impregnated tape at a constant rate. Individuals responded continuously to a theatre performance by the hand manipulation of a pointer along a six point rating scale. The pointer was connected to a stylus which registered the response on the wax-impregnated tape.

<sup>6</sup>Edward C. Mohr, "The Responses of Theatre Audiences, An experimental study," Acoustic Communication, Vol. 19, No. 4 (November, 1918), 110-141.

<sup>7</sup>Ibid.

<sup>8</sup>Norman C. Meier, "The Motor Audience-Response Recorder," in Acoustic Journal of Psychology, Vol. 48 (1948), 42-60.

Several audience response studies were the direct result of the availability of this instrumentation.<sup>8</sup>

#### Consideration of a New Data Collection System

Consideration of existing methods of data collection, particularly the desirability of mechanical systems, resulted in the decision to develop a new mechanical data collection system. The graphic level recorder might have been used instead, but it has been derided as unreliable ink pen-on-paper system or dial devices described in research literature also seemed possibilities, but such equipment was not readily available. The experiments are the need for the development of a flexible, inexpensive audience response device system would allow instantaneous and continuous responses during theatre performances.

The resultant data system with a variable choice response device able to be used in conjunction with already commercially available electronic recording/playback systems. Hereafter to be referred to as the VTR II,<sup>9</sup> this device which is powered by a standard battery.

<sup>8</sup>John Edwin S. Clark, An Experimental Study of Age as a Factor in Audience Response to the Theatre. Ph.D. Dissertation, University of Iowa, 1972. Edward Lee Myers, Technology in Audience Response. Ph.D. Dissertation, University of Iowa, 1974. William E. Morgan, An Experimental Study and Comparison of the Desirability of the VTR and VTR-2. Ph.D. Dissertation, University of Iowa, 1974.

<sup>9</sup>The VTR II developed from the ideas of this investigator with the mechanical advice, suggestions, and assistance of Edward E. Anderson, A.P.C. Technology, Robert E. Williamski, Wayne L. Morgan, David A. Campbell, & Harold H. Pierce.

consists of two main components - individual response devices and the response light panel to which they are connected (see Fig. 1).



Fig. 1--YMR II Data Collection System. Shown are five of the twenty individual response devices, the response light panel, and the six volt lantern battery power source.

#### Individual Response Devices

The individual response devices were designed for use at sea during theatre pieces, at the same time as thought was given to developing devices that would not lose the responses registered. With both considerations in mind, override response devices were developed rather than permanently installed ones. They were lightweight and of a device in shape so that they could be easily hand-held. By not being attached to each seat, they avoided the pitfalls

of laterality (a possible source of bias) of personally installed response devices, as each audience member chose a chair to which he or she held the device.

Each audience member could respond in one of three ways (that the actors were too close together, ok, or too far apart) on a cylinder equipped with a 48-pole toggle switch which could be depressed in either direction to register a response. When an audience member perceived the actors' spatial relationship to be "ok," all that was necessary was for the person to release the depressed switch. The switch was spring loaded so that it would then return to the neutral position. To help prevent confusion, the toggle switch end of each cylinder had the poles labeled with luminous-red tape (see Fig. 1), with too close together lines indicating "too close together" and too far apart lines indicating "too far apart." The determination as to the positioning of the labeled poles of the toggle switch in relationship to each audience member was a choice left up to each individual. This was done to avoid possible biasing of results which might be suspected if this were pre-determined by the experimenter. Each cylinder consisted of Styrofoam filling to add stability and to help stiffen toggle switch action. This served the additional function of minimizing an audience member's hearing of and the possible influence of the responses of others.



Fig. 1--Individual Audiotape Response Device of the VTS 12. The toggle switch may be left in the "up" position to indicate "ok," or it may be moved toward the position of the two silver tapered lines indicating "too close together" or toward the position of the two far apart lines indicating "too far apart."

#### Response Light Panel

The development of a light panel to visually register the response units on the individual devices had several advantages. Use of light emitting diodes, L.E.D.'s, enabled the light panel to be small and lightweight, yet capable of clearly registering response reactions. A compact power unit, a six volt lantern battery, was sufficient to power the forty L.E.D.'s used. The light panel provided the experimenter with immediate feedback of subject reactions to performance at the same time that the coding of information from the light panel could be video recorded for subsequent playback and data analysis.



The panel consisted of two horizontal rows of twenty L.E.D.s mounted on vector board (1 1/2" x 18 3/4") to which a white paper strip was attached (see Fig. 11). Below each L.E.D., the strip was labeled with a number corresponding to the number of the response device by which it was controlled. Each response device had two lights which registered responses on the light panel, one for each pole of the 40-pole switch. An "A" was added to L.E.D. labels for lights registering "too close" responses, a "B" for "too far" responses.



Fig. 11- Induction Response Light Panel of the YTE 11.

The response light panel was connected by cable to all response devices and by wires to the power source, the 100-ohm battery. The wires on the back of the vector board led to one end where there were five wire pin connections, each

of which handled power for four response devices. The cable running from each response device led to one of five female pin connectors with four response device cables hooked to each connector (see Fig. 4). When the male and female pin connectors were joined and the battery battery was attached to the positive and negative wires extending out from the back of the carrier board, the VTB II was complete.



Fig. 4--VTB II Data Collection System Viewed in Terms of Wiring of Component Parts

#### Step 4: Yoking/Recording/Feedback System with the VTB II

The continuous guidance reactions registering at the VTB at night panel provided qualitative visualizations of responses. For the data analysis for this study, however, a permanent record of these responses was needed. To

accomplish that task, the audience response light panel was placed on a table directly underneath the screen of a television monitor. A television camera recorded the theatre scenes showing on the monitor along with the responses of the audience registering on the light panel beneath it. A continuous record of instantaneous audience response to live theatre and to videotapes of these scenes could, thus, be made. The information was then available for playback and analysis.

CHAPTER VII  
DISCUSSION

Experimental Results

This study tested the hypothesis: "Audience response to interpersonal distance on a live theatre scene will differ from audience response to interpersonal distance in a videotape of the same live theatre scene." Although it was only necessary to test this hypothesis on one theatre scene, it was applied to two different scenes from different plays. As a result, the replicability of results could be ascertained.

The experimental design chosen, the Posttest-Only Control Group Design,<sup>1</sup> allowed scene presentation in a sequence similar to that used in the classroom. This was important since the implications of this study were to be applied to teaching methodology. Audience One (the experimental group) saw the opening scene of a play performed live and then saw the playback of the scene on videotape. Their responses to the videotape after prior exposure to the live scene could then be compared to their initial responses to the live scene. Audience Two (the control group) only viewed the scene on videotape. Their responses

<sup>1</sup>Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research on Teaching, RAND Society, Chicago Publishing Company, 1963, pp. 4, 11-14.

could then be compared to those of the experimental group. The same procedure was used with a second stimulus scene, with stimulus Three as the experimental group and stimulus Four as the control group.

#### Scene Selection

While two considerably different scenes could have been selected to see if the experimental results could be replicated, the experimenter chose to see if replicability of findings would occur using smaller scenes, leaving open possibilities for investigations by others. The scenes chosen for use in this study were the opening vignettes of Edward Albee's A Delicate Balance<sup>2</sup> (Appendix A) and Lucille Fletcher's Flight Night<sup>3</sup> (Appendix B). The decision to use the initial scene of each play resulted from their smaller characteristics. Both scenes contain explications providing the audience with insight into the attitude of two main characters toward their surroundings and toward each other. The scenes are somewhat unusual in that the major characters of each play are the ones providing this information, whereas almost all characters often fulfill this function. The deliberate selection of opening vignettes was done so the audience could not be confused from viewing interior scenes taken out of context.

<sup>2</sup>Edward Albee, A Delicate Balance (New York: Atlantic, 1964), pp. 2-12.

<sup>3</sup>Lucille Fletcher, Flight Night (New York: Random House, 1971), pp. 1-12.

It is common to have scenes between husbands and wives, so such a contrasting was ideal for this study. In both scenes, the scenes takes place in the couple's home. The scenes are realistic in style, occur in the present, are various in time, and have conflict arising between the pairs. In A Delicate Balance, the conflict centers around the couple's opposing attitudes towards the wife's sister, Claire. In Black Moon, a conflict results when the wife says she has seen a dead body in a neighboring building and the husband finds it hard to believe, so is reluctant to report it to the police. The initial tension over Claire and over the dead body provokes subsequent dramatic action and creates suspense within the vignettes. In each scene, the writer appears to be the stronger willed of the two.

The scenes are similar in duration; each character has either thirty-five or thirty-six individual lines of speaking. The running time of the scenes was approximately nine minutes apiece.

#### Data Arrangement

In keeping with the application of the results of this study to teaching methodology, a room was selected which could be readily serve as a theater classroom. A rectangular classroom (28'6" x 18'4") in Library East of the University of Florida at Gainesville had sufficient space for actors, audience, and video equipment.<sup>4</sup> The actors had rehearsed with the knowledge they would be filmed as

<sup>4</sup>Video equipment assistance was provided by James H. Florin.

approximately, the two screens acting as 180°. The screen nearer the 180° is located 100 cm from the other end of the room whereas 18 provided possibilities for normal audience seating in the central portion of the room. Two rows of staggered seating were used to enable all audience members to have a clear view of the playing area. Space for the video equipment was at the opposite end of the room from the acting area (see Fig. 1).

#### Equipment layout

Individually numbered response devices were given to each audience member, with their device number determining their seat number. Cables from each device ran to the equipment portion of the room where it was connected to the response light panel. The VTR II was in working order when the latter's battery power source was connected to the room from the response light panel. Both sat on a table behind the audience, with the response light panel placed directly under the screen of a television monitor, so that they could be videotaped simultaneously (see Fig. 1).

Camera One, a black and white camera mounted on a tripod, was centered behind the audience. It was sufficiently far back in the room to allow the videotaping of the entire acting area. The one-inch videotape container for that camera sat on a table at the rear of the room where it would not be distracting to the audience. At each live scene was presented, Camera One recorded that scene. At the same time, television Playback Monitor One provided an

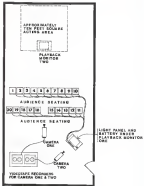


Fig. 3--3-Door Attachment and Equipment Layout for YTB II Audience Response Study (Darryl Cunningham, Graphic Artist)



instant replay) As that occurred, the response panel registered the response of the audience to the performance.

Camera Two, a black and white camera mounted on a tripod, recorded the light panel with the instantaneous replay as Playback Monitor Two provided the background. The air-act videotape recorder for Camera Two sat on the table with the other videotape recorder (see Fig. 1). The same procedure was used every time that audience responses would be recorded.

Playback Monitor Two was used only when audience were responding to videotapes of the live scenes. When on use, it was centered on its stand in front of the audience, positioned so that all audience members could see it. When not in use, it was shifted on its stand to the rear of the room where it would not distract the audience.

#### Production Control

Actors with experience and established ability in theatre were chosen to act in the scenes. The experimenter viewed the scenes in advance of the study, determining that the scenes were sufficiently well-constructed to be ready for performance before an audience. As is often the case in classroom situations, the actors were allowed to use their own ideas for a set along with costume suggestions of their characters. General classroom illumination was used for lighting for the scenes.

### Audience Composition

Four audiences of University of Florida student volunteers from several Speech/Theater classes taught by various instructors<sup>5</sup> were used. Audiences One and Two for A. Collins Salinas each consisted of ten males and six females. The males and females occupied corresponding seats in Audience One (the experimental group) and in Audience Two (the control group). As much as possible males and females were seated alternately. Thus, in Audiences One and Two, the seating configurations were:

1	2	3	4	5	6	7	8	9	10
Empty	Male	Female	Male	Female	Male	Female	Male	Female	Empty
11	12	13	14	15	16	17	18	19	20
Empty	Male	Female	Male	Female	Male	Female	Male	Female	Empty

The scene from Right Myth was seen by Audience Three (the experimental group) and Audience Four (the control group). In both groups the seven males and six females occupied corresponding seats. Males and females were seated alternately in the following configuration:

1	2	3	4	5	6	7	8	9	10
Empty	Empty	Male	Female	Male	Female	Male	Female	Male	Empty
11	12	13	14	15	16	17	18	19	20
Empty	Empty	Female	Male	Female	Male	Female	Male	Female	Empty

<sup>5</sup>Some participants took the place of a systematic volunteer. Participants One and Two of Theatre class received "new money" for participating. Other instructors may have used similar means to encourage students to volunteer.

### Integration of the Subjects

It was important that all four subjects receive exactly the same instructions. A written statement was prepared for subjects which explained the nature of the study and provided instructions for using the individual response device. The following information was read by the experimenter to each subject:

In this study, the use of space is thought to help or to hinder the subject's consideration of the choice production as such. In order to teach subjects and discussers about the use of space on stages, some schematic videotape pictures showed. The use of videotape pictures to teach subjects and discussers about space is based simply on facts. This investigation is about you and 4 participants is designed to determine the relationship between audience response to interpersonal distance by using actors in love scenes scenes and audience response to interpersonal distance between actors in videotapes of the same scenes scenes.

At your task is an individual audience response device. You will be asked to make certain the judgments throughout the scenes. There are not any right or wrong answers--just your individual aesthetic judgments. Do not pay any attention to how your neighbor responds. I am only interested in your own individual aesthetic judgment.

Please hold your audience response device at this time. If at any point in the scenes in your schematic judgment the actors are too close together (holding all other aspects of the production into consideration), push the switch in the direction of the two close together markings on the top of your box. Continue pressing the switch in that direction as long as in your schematic judgment the actors are too close together. Hold the distance between them to "right" again, let loose of the switch and it will pop back to neutral will by itself.

If at any point in the scenes in your schematic judgment the actors are too far apart (holding all other aspects of the production into consideration), push the switch in the direction of the two far apart markings on the top of your box. Continue pressing the switch in that direction as long as in your schematic judgment the actors are

too far apart. When the distance between them is "right" again, let down of the switch and it will pop back to neutral all by itself.

If in your aesthetic judgment the entire spatial relationship is "right" (taking all other aspects of the production into consideration), do not push the switch in either direction- leave it in the neutral position.

You may now practice using the device. Each response you make causes a light to go on on a light panel. The light panel will be sitting under a television set which provides an instantaneous reading of the scene you are viewing. A camera will be videotaping the light panel and the television reader. Later I will go back and analyze the data recorded on the videotape.

### Organization of the Experiment

Each audience member decides whether the actors in each scene appeared "too close together," appeared "at" (at the appropriate interpersonal distance), or appeared "too far apart," making continuous responses accordingly on an individual audience response device...

CHAPTER IV  
DATA ANALYSIS AND RESULTS

Procedures followed for Data Analysis

After the data had been gathered, a series of steps organized the required information into an appropriate form for analysis. The first procedure used consisted of dubbing the videotaped responses with numbers from a video-timing device. In the data, the timing numbers appeared continuously throughout each scene beginning with 0.000 and progressing in terms of second intervals. By relating the subjects' responses to a time frame, a detailed analysis was possible.<sup>1</sup>

The second procedure necessary in preparing the data for analysis was to transfer the record of "what happened" from videotape to paper. Lists were made which would indicate which persons made responses, in which scene (two scenes together/one for again) they were made, and at what time the responses began and ended (Tables 1-6). This was accomplished by playing back the videotapes on a one-track videotape recorder/player with "slow" and "stop" capabilities, with the playback speed being controlled manually. Lists could be taken to record the required data.

<sup>1</sup>Using the subject lists responses to dialogues or actions could have proved a great measurement variable for the present study.

TABLE 1  
AMOUNTS AND ALLOCATIONS TO LINE ITEMS  
FROM A DELEGATE BALANCE

Particle number & Mode	Time min	Con- ent	Per- cent	Measured CPI	Time min	Con- ent	Per- cent	Measured CPI
12 0	0:00:00	0	0	0	0:00:00	0	0	0
12 1	0:00:01	1	1	1	0:00:01	1	1	1
12 2	0:00:02	2	2	2	0:00:02	2	2	2
12 3	0:00:03	3	3	3	0:00:03	3	3	3
12 4	0:00:04	4	4	4	0:00:04	4	4	4
12 5	0:00:05	5	5	5	0:00:05	5	5	5
12 6	0:00:06	6	6	6	0:00:06	6	6	6
12 7	0:00:07	7	7	7	0:00:07	7	7	7
12 8	0:00:08	8	8	8	0:00:08	8	8	8
12 9	0:00:09	9	9	9	0:00:09	9	9	9
12 10	0:00:10	10	10	10	0:00:10	10	10	10
12 11	0:00:11	11	11	11	0:00:11	11	11	11
12 12	0:00:12	12	12	12	0:00:12	12	12	12
12 13	0:00:13	13	13	13	0:00:13	13	13	13
12 14	0:00:14	14	14	14	0:00:14	14	14	14
12 15	0:00:15	15	15	15	0:00:15	15	15	15
12 16	0:00:16	16	16	16	0:00:16	16	16	16
12 17	0:00:17	17	17	17	0:00:17	17	17	17
12 18	0:00:18	18	18	18	0:00:18	18	18	18
12 19	0:00:19	19	19	19	0:00:19	19	19	19
12 20	0:00:20	20	20	20	0:00:20	20	20	20
12 21	0:00:21	21	21	21	0:00:21	21	21	21
12 22	0:00:22	22	22	22	0:00:22	22	22	22
12 23	0:00:23	23	23	23	0:00:23	23	23	23
12 24	0:00:24	24	24	24	0:00:24	24	24	24
12 25	0:00:25	25	25	25	0:00:25	25	25	25
12 26	0:00:26	26	26	26	0:00:26	26	26	26
12 27	0:00:27	27	27	27	0:00:27	27	27	27
12 28	0:00:28	28	28	28	0:00:28	28	28	28
12 29	0:00:29	29	29	29	0:00:29	29	29	29
12 30	0:00:30	30	30	30	0:00:30	30	30	30
12 31	0:00:31	31	31	31	0:00:31	31	31	31
12 32	0:00:32	32	32	32	0:00:32	32	32	32
12 33	0:00:33	33	33	33	0:00:33	33	33	33
12 34	0:00:34	34	34	34	0:00:34	34	34	34
12 35	0:00:35	35	35	35	0:00:35	35	35	35
12 36	0:00:36	36	36	36	0:00:36	36	36	36
12 37	0:00:37	37	37	37	0:00:37	37	37	37
12 38	0:00:38	38	38	38	0:00:38	38	38	38
12 39	0:00:39	39	39	39	0:00:39	39	39	39
12 40	0:00:40	40	40	40	0:00:40	40	40	40
12 41	0:00:41	41	41	41	0:00:41	41	41	41
12 42	0:00:42	42	42	42	0:00:42	42	42	42
12 43	0:00:43	43	43	43	0:00:43	43	43	43
12 44	0:00:44	44	44	44	0:00:44	44	44	44
12 45	0:00:45	45	45	45	0:00:45	45	45	45
12 46	0:00:46	46	46	46	0:00:46	46	46	46
12 47	0:00:47	47	47	47	0:00:47	47	47	47
12 48	0:00:48	48	48	48	0:00:48	48	48	48
12 49	0:00:49	49	49	49	0:00:49	49	49	49



TABLE 1.—Continued

Device Type <sup>a</sup> & Model	Time On	Cor. Pos. m <sup>b</sup> ± 1/2	Measured Off	Time Off	Cor. Pos. m <sup>b</sup> ± 1/2	Measured Off
17 B	0-10-1	0-10-0	0-04	0-03	0-07	0-07
4 B	0-10-17	0-08-0	0-00	0-07	0-10-0	0-07
11 B	0-10-4	0-08-0	0-00	0-04	0-10-0	0-04
10 B	0-10-0	0-01-0	0-11	0-07	0-07	0-07
3 B	0-10-0	0-01-0	0-00	0-00	0-11	0-00
3 B	0-10-0	0-00-0	0-11	0-07	0-07	0-07
10 B	0-10-7	0-04-0	0-04	0-04	0-07	0-04
7 B	0-10-0	0-04-0	0-04	0-00	0-10-0	0-00
10 B	0-10-6	0-00-0	0-00	0-07	0-11-0	0-00
14 B	0-10-0	0-00-0	0-11	0-00	0-10-0	0-10
10 B	0-10-0	0-00-0	0-10	0-00	0-10-0	0-00
11 B	0-10-10	0-00-0	0-10	0-07	0-11-0	0-07
10 B	0-10-0	0-00-0	0-11	0-07	0-07-0	0-07
7 B	0-10-0	0-01-0	0-10	0-07	0-07-0	0-07
0 A	0-10-0	0-07-0	0-07	0-04	0-04-0	0-04
0 A	0-10-0	0-00-0	0-10	0-07	0-00-0	0-07



TABLE 2

 MINIMUM ONE SIMULTANEOUS PHOTOGRAPH BY  
 SPOKE HORN & DELICATE BALANCE

Revolver Number & Vials	Time On	Exp., Pos., and .4	Roundoff -0.1	Time Off	Exp., Pos., and .4	Roundoff -0.1
100	0 00	0 00	0 00	1 31	1 30	1 31
270	0 00	0 00	0 00	0 30	0 30	0 30
300	0 11	0 11	0 11	0 31	0 31	0 31
400	0 13	0 13	0 13	0 33	0 33	0 33
500	0 18	0 18	0 18	0 38	0 38	0 38
600	0 20	0 20	0 20	0 40	0 40	0 40
700	0 21	0 21	0 21	0 41	0 41	0 41
800	0 26	0 26	0 26	0 46	0 46	0 46
900	0 28	0 28	0 28	0 48	0 48	0 48
1000	0 30	0 30	0 30	0 50	0 50	0 50
1100	0 32	0 32	0 32	0 52	0 52	0 52
1200	0 35	0 35	0 35	0 55	0 55	0 55
1300	0 37	0 37	0 37	0 57	0 57	0 57
1400	0 40	0 40	0 40	0 59	0 59	0 59
1500	0 42	0 42	0 42	0 61	0 61	0 61
1600	0 45	0 45	0 45	0 64	0 64	0 64
1700	0 47	0 47	0 47	0 66	0 66	0 66
1800	0 48	0 48	0 48	0 68	0 68	0 68
1900	0 49	0 49	0 49	0 69	0 69	0 69
2000	0 50	0 50	0 50	0 70	0 70	0 70
2100	0 52	0 52	0 52	0 72	0 72	0 72
2200	0 53	0 53	0 53	0 73	0 73	0 73
2300	0 54	0 54	0 54	0 74	0 74	0 74
2400	0 55	0 55	0 55	0 75	0 75	0 75
2500	0 56	0 56	0 56	0 76	0 76	0 76
2600	0 57	0 57	0 57	0 77	0 77	0 77
2700	0 58	0 58	0 58	0 78	0 78	0 78
2800	0 59	0 59	0 59	0 79	0 79	0 79
2900	1 00	1 00	1 00	1 10	1 10	1 10
3000	1 01	1 01	1 01	1 11	1 11	1 11
3100	1 02	1 02	1 02	1 12	1 12	1 12
3200	1 03	1 03	1 03	1 13	1 13	1 13
3300	1 04	1 04	1 04	1 14	1 14	1 14
3400	1 05	1 05	1 05	1 15	1 15	1 15
3500	1 06	1 06	1 06	1 16	1 16	1 16
3600	1 07	1 07	1 07	1 17	1 17	1 17
3700	1 08	1 08	1 08	1 18	1 18	1 18
3800	1 09	1 09	1 09	1 19	1 19	1 19
3900	1 10	1 10	1 10	1 20	1 20	1 20
4000	1 11	1 11	1 11	1 21	1 21	1 21
4100	1 12	1 12	1 12	1 22	1 22	1 22
4200	1 13	1 13	1 13	1 23	1 23	1 23
4300	1 14	1 14	1 14	1 24	1 24	1 24
4400	1 15	1 15	1 15	1 25	1 25	1 25
4500	1 16	1 16	1 16	1 26	1 26	1 26
4600	1 17	1 17	1 17	1 27	1 27	1 27
4700	1 18	1 18	1 18	1 28	1 28	1 28
4800	1 19	1 19	1 19	1 29	1 29	1 29
4900	1 20	1 20	1 20	1 30	1 30	1 30
5000	1 21	1 21	1 21	1 31	1 31	1 31
5100	1 22	1 22	1 22	1 32	1 32	1 32
5200	1 23	1 23	1 23	1 33	1 33	1 33
5300	1 24	1 24	1 24	1 34	1 34	1 34
5400	1 25	1 25	1 25	1 35	1 35	1 35
5500	1 26	1 26	1 26	1 36	1 36	1 36
5600	1 27	1 27	1 27	1 37	1 37	1 37
5700	1 28	1 28	1 28	1 38	1 38	1 38
5800	1 29	1 29	1 29	1 39	1 39	1 39
5900	1 30	1 30	1 30	1 40	1 40	1 40
6000	1 31	1 31	1 31	1 41	1 41	1 41
6100	1 32	1 32	1 32	1 42	1 42	1 42
6200	1 33	1 33	1 33	1 43	1 43	1 43
6300	1 34	1 34	1 34	1 44	1 44	1 44
6400	1 35	1 35	1 35	1 45	1 45	1 45
6500	1 36	1 36	1 36	1 46	1 46	1 46
6600	1 37	1 37	1 37	1 47	1 47	1 47
6700	1 38	1 38	1 38	1 48	1 48	1 48
6800	1 39	1 39	1 39	1 49	1 49	1 49
6900	1 40	1 40	1 40	1 50	1 50	1 50
7000	1 41	1 41	1 41	1 51	1 51	1 51
7100	1 42	1 42	1 42	1 52	1 52	1 52
7200	1 43	1 43	1 43	1 53	1 53	1 53
7300	1 44	1 44	1 44	1 54	1 54	1 54
7400	1 45	1 45	1 45	1 55	1 55	1 55
7500	1 46	1 46	1 46	1 56	1 56	1 56
7600	1 47	1 47	1 47	1 57	1 57	1 57
7700	1 48	1 48	1 48	1 58	1 58	1 58
7800	1 49	1 49	1 49	1 59	1 59	1 59
7900	1 50	1 50	1 50	2 00	2 00	2 00
8000	1 51	1 51	1 51	2 01	2 01	2 01
8100	1 52	1 52	1 52	2 02	2 02	2 02
8200	1 53	1 53	1 53	2 03	2 03	2 03
8300	1 54	1 54	1 54	2 04	2 04	2 04
8400	1 55	1 55	1 55	2 05	2 05	2 05
8500	1 56	1 56	1 56	2 06	2 06	2 06
8600	1 57	1 57	1 57	2 07	2 07	2 07
8700	1 58	1 58	1 58	2 08	2 08	2 08
8800	1 59	1 59	1 59	2 09	2 09	2 09
8900	2 00	2 00	2 00	2 10	2 10	2 10
9000	2 01	2 01	2 01	2 11	2 11	2 11



TABLE 2—Continued

Device Number & Mode	Type On	Exp. Fac. of —4	Measured Off	Type Off	Exp. Fac. of —4	Measured Off
14 B	0.1477	0.1470	0.14	0.1312	0.1304	0.13
15 B	0.1480	0.1480	0.14	0.1313	0.1305	0.13
16 B	0.1484	0.1484	0.14	0.1314	0.1306	0.13
17 B	0.1487	0.1487	0.14	0.1315	0.1307	0.13
18 A	0.1490	0.1490	0.14	0.1316	0.1308	0.13
18 B	0.1494	0.1494	0.14	0.1317	0.1309	0.13
19 A	0.1497	0.1497	0.14	0.1318	0.1310	0.13
19 B	0.1498	0.1498	0.14	0.1319	0.1311	0.13
20 A	0.1501	0.1501	0.14	0.1320	0.1312	0.13
20 B	0.1502	0.1502	0.14	0.1321	0.1313	0.13
21 A	0.1504	0.1504	0.14	0.1322	0.1314	0.13
21 B	0.1505	0.1505	0.14	0.1323	0.1315	0.13
22 A	0.1507	0.1507	0.14	0.1324	0.1316	0.13
22 B	0.1508	0.1508	0.14	0.1325	0.1317	0.13
23 A	0.1510	0.1510	0.14	0.1326	0.1318	0.13
23 B	0.1511	0.1511	0.14	0.1327	0.1319	0.13
24 A	0.1513	0.1513	0.14	0.1328	0.1320	0.13
24 B	0.1514	0.1514	0.14	0.1329	0.1321	0.13
25 A	0.1516	0.1516	0.14	0.1330	0.1322	0.13
25 B	0.1517	0.1517	0.14	0.1331	0.1323	0.13
26 A	0.1519	0.1519	0.14	0.1332	0.1324	0.13
26 B	0.1520	0.1520	0.14	0.1333	0.1325	0.13
27 A	0.1522	0.1522	0.14	0.1334	0.1326	0.13
27 B	0.1523	0.1523	0.14	0.1335	0.1327	0.13
28 A	0.1525	0.1525	0.14	0.1336	0.1328	0.13
28 B	0.1526	0.1526	0.14	0.1337	0.1329	0.13
29 A	0.1528	0.1528	0.14	0.1338	0.1330	0.13
29 B	0.1529	0.1529	0.14	0.1339	0.1331	0.13
30 A	0.1531	0.1531	0.14	0.1340	0.1332	0.13
30 B	0.1532	0.1532	0.14	0.1341	0.1333	0.13
31 A	0.1534	0.1534	0.14	0.1342	0.1334	0.13
31 B	0.1535	0.1535	0.14	0.1343	0.1335	0.13
32 A	0.1537	0.1537	0.14	0.1344	0.1336	0.13
32 B	0.1538	0.1538	0.14	0.1345	0.1337	0.13
33 A	0.1540	0.1540	0.14	0.1346	0.1338	0.13
33 B	0.1541	0.1541	0.14	0.1347	0.1339	0.13
34 A	0.1543	0.1543	0.14	0.1348	0.1340	0.13
34 B	0.1544	0.1544	0.14	0.1349	0.1341	0.13
35 A	0.1546	0.1546	0.14	0.1350	0.1342	0.13
35 B	0.1547	0.1547	0.14	0.1351	0.1343	0.13
36 A	0.1549	0.1549	0.14	0.1352	0.1344	0.13
36 B	0.1550	0.1550	0.14	0.1353	0.1345	0.13
37 A	0.1552	0.1552	0.14	0.1354	0.1346	0.13
37 B	0.1553	0.1553	0.14	0.1355	0.1347	0.13
38 A	0.1555	0.1555	0.14	0.1356	0.1348	0.13
38 B	0.1556	0.1556	0.14	0.1357	0.1349	0.13
39 A	0.1558	0.1558	0.14	0.1358	0.1350	0.13
39 B	0.1559	0.1559	0.14	0.1359	0.1351	0.13
40 A	0.1561	0.1561	0.14	0.1360	0.1352	0.13
40 B	0.1562	0.1562	0.14	0.1361	0.1353	0.13
41 A	0.1564	0.1564	0.14	0.1362	0.1354	0.13
41 B	0.1565	0.1565	0.14	0.1363	0.1355	0.13
42 A	0.1567	0.1567	0.14	0.1364	0.1356	0.13
42 B	0.1568	0.1568	0.14	0.1365	0.1357	0.13
43 A	0.1570	0.1570	0.14	0.1366	0.1358	0.13
43 B	0.1571	0.1571	0.14	0.1367	0.1359	0.13
44 A	0.1573	0.1573	0.14	0.1368	0.1360	0.13
44 B	0.1574	0.1574	0.14	0.1369	0.1361	0.13
45 A	0.1576	0.1576	0.14	0.1370	0.1362	0.13
45 B	0.1577	0.1577	0.14	0.1371	0.1363	0.13
46 A	0.1579	0.1579	0.14	0.1372	0.1364	0.13
46 B	0.1580	0.1580	0.14	0.1373	0.1365	0.13
47 A	0.1582	0.1582	0.14	0.1374	0.1366	0.13
47 B	0.1583	0.1583	0.14	0.1375	0.1367	0.13
48 A	0.1585	0.1585	0.14	0.1376	0.1368	0.13
48 B	0.1586	0.1586	0.14	0.1377	0.1369	0.13
49 A	0.1588	0.1588	0.14	0.1378	0.1370	0.13
49 B	0.1589	0.1589	0.14	0.1379	0.1371	0.13
50 A	0.1591	0.1591	0.14	0.1380	0.1372	0.13
50 B	0.1592	0.1592	0.14	0.1381	0.1373	0.13
51 A	0.1594	0.1594	0.14	0.1382	0.1374	0.13
51 B	0.1595	0.1595	0.14	0.1383	0.1375	0.13
52 A	0.1597	0.1597	0.14	0.1384	0.1376	0.13
52 B	0.1598	0.1598	0.14	0.1385	0.1377	0.13
53 A	0.1600	0.1600	0.14	0.1386	0.1378	0.13
53 B	0.1601	0.1601	0.14	0.1387	0.1379	0.13
54 A	0.1603	0.1603	0.14	0.1388	0.1380	0.13
54 B	0.1604	0.1604	0.14	0.1389	0.1381	0.13
55 A	0.1606	0.1606	0.14	0.1390	0.1382	0.13
55 B	0.1607	0.1607	0.14	0.1391	0.1383	0.13
56 A	0.1609	0.1609	0.14	0.1392	0.1384	0.13
56 B	0.1610	0.1610	0.14	0.1393	0.1385	0.13
57 A	0.1612	0.1612	0.14	0.1394	0.1386	0.13
57 B	0.1613	0.1613	0.14	0.1395	0.1387	0.13
58 A	0.1615	0.1615	0.14	0.1396	0.1388	0.13
58 B	0.1616	0.1616	0.14	0.1397	0.1389	0.13
59 A	0.1618	0.1618	0.14	0.1398	0.1390	0.13
59 B	0.1619	0.1619	0.14	0.1399	0.1391	0.13
60 A	0.1621	0.1621	0.14	0.1400	0.1392	0.13
60 B	0.1622	0.1622	0.14	0.1401	0.1393	0.13
61 A	0.1624	0.1624	0.14	0.1402	0.1394	0.13
61 B	0.1625	0.1625	0.14	0.1403	0.1395	0.13
62 A	0.1627	0.1627	0.14	0.1404	0.1396	0.13
62 B	0.1628	0.1628	0.14	0.1405	0.1397	0.13
63 A	0.1630	0.1630	0.14	0.1406	0.1398	0.13
63 B	0.1631	0.1631	0.14	0.1407	0.1399	0.13
64 A	0.1633	0.1633	0.14	0.1408	0.1400	0.13
64 B	0.1634	0.1634	0.14	0.1409	0.1401	0.13
65 A	0.1636	0.1636	0.14	0.1410	0.1402	0.13
65 B	0.1637	0.1637	0.14	0.1411	0.1403	0.13
66 A	0.1639	0.1639	0.14	0.1412	0.1404	0.13
66 B	0.1640	0.1640	0.14	0.1413	0.1405	0.13
67 A	0.1642	0.1642	0.14	0.1414	0.1406	0.13
67 B	0.1643	0.1643	0.14	0.1415	0.1407	0.13
68 A	0.1645	0.1645	0.14	0.1416	0.1408	0.13
68 B	0.1646	0.1646	0.14	0.1417	0.1409	0.13
69 A	0.1648	0.1648	0.14	0.1418	0.1410	0.13
69 B	0.1649	0.1649	0.14	0.1419	0.1411	0.13
70 A	0.1651	0.1651	0.14	0.1420	0.1412	0.13
70 B	0.1652	0.1652	0.14	0.1421	0.1413	0.13
71 A	0.1654	0.1654	0.14	0.1422	0.1414	0.13
71 B	0.1655	0.1655	0.14	0.1423	0.1415	0.13
72 A	0.1657	0.1657	0.14	0.1424	0.1416	0.13
72 B	0.1658	0.1658	0.14	0.1425	0.1417	0.13
73 A	0.1660	0.1660	0.14	0.1426	0.1418	0.13
73 B	0.1661	0.1661	0.14	0.1427	0.1419	0.13
74 A	0.1663	0.1663	0.14	0.1428	0.1420	0.13
74 B	0.1664	0.1664	0.14	0.1429	0.1421	0.13
75 A	0.1666	0.1666	0.14	0.1430	0.1422	0.13
75 B	0.1667	0.1667	0.14	0.1431	0.1423	0.13
76 A	0.1669	0.1669	0.14	0.1432	0.1424	0.13
76 B	0.1670	0.1670	0.14	0.1433	0.1425	0.13
77 A	0.1672	0.1672	0.14	0.1434	0.1426	0.13
77 B	0.1673	0.1673	0.14	0.1435	0.1427	0.13
78 A	0.1675	0.1675	0.14	0.1436	0.1428	0.13
78 B	0.1676	0.1676	0.14	0.1437	0.1429	0.13
79 A	0.1678	0.1678	0.14	0.1438	0.1430	0.13
79 B	0.1679	0.1679	0.14	0.1439	0.1431	0.13
80 A	0.1681	0.1681	0.14	0.1440	0.1432	0.13
80 B	0.1682	0.1682	0.14	0.1441	0.1433	0.13
81 A	0.1684	0.1684	0.14	0.1442	0.1434	0.13
81 B	0.1685	0.1685	0.14	0.1443	0.1435	0.13
82 A	0.1687	0.1687	0.14	0.1444	0.1436	0.13
82 B	0.1688	0.1688	0.14	0.1445	0.1437	0.13
83 A	0.1690	0.1690	0.14	0.1446	0.1438	0.13
83 B	0.1691	0.1691	0.14	0.1447	0.1439	0.13
84 A	0.1693	0.1693	0.14	0.1448	0.1440	0.13
84 B	0.1694	0.1694	0.14	0.1449	0.1441	0.13
85 A	0.1696	0.1696	0.14	0.1450	0.1442	0.13
85 B	0.1697	0.1697	0.14	0.1451	0.1443	0.13
86 A	0.1699	0.1699	0.14	0.1452	0.1444	0.13
86 B	0.1700	0.1700	0.14	0.1453	0.1445	0.13
87 A	0.1702	0.1702	0.14	0.1454	0.1446	0.13
87 B	0.1703	0.1703	0.14	0.1455	0.1447	0.13
88 A	0.1705	0.1705	0.14	0.1456	0.1448	0.13
88 B	0.1706	0.1706	0.14	0.1457	0.1449	0.13
89 A	0.1708	0.1708	0.14	0.1458	0.1450	0.13
89 B	0.1709	0.1709	0.14	0.1459	0.1451	0.13
90 A	0.1711	0.1711	0.14	0.1460	0.1452	0.13
90 B	0.1712	0.1712	0.14	0.1461	0.1453	0.13
91 A	0.1714	0.1714	0.14	0.1462	0.1454	0.13
91 B	0.1715	0.1715	0.14	0.1463	0.1455	0.13
92 A	0.1717	0.1717	0.14	0.1464	0.1456	0.13
92 B	0.1718	0.1718	0.14	0.1465	0.1457	0.13
93 A	0.1720	0.1720	0.14	0.1466	0.1458	0.13
93 B	0.1721	0.1721	0.14	0.1467	0.1459	0.13
94 A	0.1723	0.1723	0.14	0.1468	0.1460	0.13
94 B	0.1724	0.1724	0.14	0.1469	0.1461	0.13
95 A	0.1726	0.1726	0.14	0.1470	0.1462	0.13
95 B	0.1727	0.1727	0.14	0.1471	0.1463	0.13
96 A	0.1729	0.1729	0.14	0.1472	0.1464	0.13
96 B	0.1730	0.1730	0.14	0.1473	0.1465	0.13
97 A	0.1732	0.1732	0.14	0.1474	0.1466	0.13</



TABLE 2--Continued

Device Number 1. Model	Time Co	Cor. Fac. x10 <sup>-4</sup>	Rounded Off	Time Off	Cor. Fac. x10 <sup>-4</sup>	Rounded Off
14 B	0-00-3	0-00-0	0-00	0-00-3	0-00-1	0-00
14 B	0-01-3	0-00-3	0-01	0-01-05	0-00-1	0-00
14 A	0-01-04	0-01-12	0-01	0-01-1	0-01-6	0-02
14 B	0-02-1	0-01-0	0-02	0-02-04	0-01-2	0-02
14 B	0-02-10	0-00-10	0-02	0-02-2	0-01-0	0-02
14 B	0-02-17	0-00-15	0-02	0-02-0	0-00-0	0-01
14 A	0-04-2	0-00-0	0-04	0-04-4	0-02-0	0-02



TABLE 2- Continued

Surface Number q Node	Time hr	Revised COT	Time COT	Revised COT
8 A	1:25:4	1:26	1:23:4	1:24
8 B	1:26:1	1:26	1:23:5	1:24
8 C	1:26:4	1:26	1:24:0	1:24
12 B	1:26:4	1:26	1:24:4	1:25
12 D	1:27:4	1:27	1:24:8	1:24
12 E	1:28:4	1:27	1:24:1	1:24
12 F	1:29:4	1:27	1:24:2	1:24
12 G	1:30:4	1:27	1:24:3	1:24
8 H	1:30:5	1:28	1:24:4	1:24
12 H	1:31:4	1:28	1:24:5	1:24
12 I	1:32:4	1:28	1:24:6	1:24
12 J	1:33:4	1:28	1:24:7	1:24
8 A	1:33:7	1:28	1:24:8	1:24
12 A	1:34:4	1:28	1:24:9	1:24
8 B	1:34:11	1:28	1:24:10	1:24
12 B	1:34:15	1:28	1:24:11	1:24
12 C	1:34:18	1:28	1:24:12	1:24
12 D	1:34:21	1:28	1:24:13	1:24
12 E	1:34:24	1:28	1:24:14	1:24
12 F	1:34:27	1:28	1:24:15	1:24
12 G	1:34:30	1:28	1:24:16	1:24
8 C	1:34:33	1:28	1:24:17	1:24
12 H	1:34:36	1:28	1:24:18	1:24
8 A	1:34:39	1:28	1:24:19	1:24
12 I	1:34:42	1:28	1:24:20	1:24
12 J	1:34:45	1:28	1:24:21	1:24
12 A	1:34:48	1:28	1:24:22	1:24
12 B	1:34:51	1:28	1:24:23	1:24
12 C	1:34:54	1:28	1:24:24	1:24
12 D	1:34:57	1:28	1:24:25	1:24
12 E	1:35:0	1:28	1:24:26	1:24
12 F	1:35:03	1:28	1:24:27	1:24
12 G	1:35:06	1:28	1:24:28	1:24
12 H	1:35:09	1:28	1:24:29	1:24
12 I	1:35:12	1:28	1:24:30	1:24
12 J	1:35:15	1:28	1:24:31	1:24
12 A	1:35:18	1:28	1:24:32	1:24
12 B	1:35:21	1:28	1:24:33	1:24
12 C	1:35:24	1:28	1:24:34	1:24
12 D	1:35:27	1:28	1:24:35	1:24
12 E	1:35:30	1:28	1:24:36	1:24
12 F	1:35:33	1:28	1:24:37	1:24
12 G	1:35:36	1:28	1:24:38	1:24
12 H	1:35:39	1:28	1:24:39	1:24
12 I	1:35:42	1:28	1:24:40	1:24
12 J	1:35:45	1:28	1:24:41	1:24







TABLE 8  
ADDITION TIME  
FROM  
EVALUATE TO LIVE SCORE  
NIGHT ACTION

Dev List Number & Date	Time On	Scored off	Time off	Scored off
4 B	0-25-4	0-25	0-25-4	0-27
11 B	0-25-8	0-27	1-05-4	1-08
20 B	0-27-1	0-29	0-30-4	0-30
4 B	0-30-4	0-30	1-00-4	1-00
21 B	0-32-0	1-00	1-01-4	1-02
16 B	0-32-10	1-12	1-10-5	1-10
1 B	0-40-0	1-40	1-40-0	1-40
7 B	0-41-3	1-40	1-40-0	1-41
1 B	0-48-0	1-48	1-48-0	1-48
10 B	0-51-7	2-04	2-04-4	2-05
15 A	2-00-4	2-00	2-11-5	2-11
6 A	2-00-4	2-01	2-10-4	2-10
16 A	2-03-0	2-21	2-20-5	2-22
10 B	2-21-0	2-22	2-40-0	2-40
17 A	2-25-0	2-40	2-40-0	2-41
14 B	2-26-2	2-44	2-43-4	2-45
12 B	2-26-7	2-47	2-51-0	2-52
12 B	2-26-9	2-52	2-52-0	2-53
13 B	2-28-7	3-12	4-00-4	4-00
8 B	2-30-0	3-30	3-30-0	3-30
7 B	3-00-0	3-30	4-00-0	4-00
6 B	3-00-4	3-44	4-00-0	4-00
14 A	3-00-4	3-42	3-54-2	3-54
15 B	3-10-7	3-40	4-00-0	4-00
10 B	3-07-0	3-40	4-00-4	4-01
3 B	4-00-1	4-00	4-00-0	4-04
4 A	4-01-2	4-00	4-00-0	4-05
13 B	4-00-0	4-00	4-00-0	4-04
4 B	4-00-5	4-01	4-00-0	4-05
24 B	4-00-0	4-00	4-00-0	4-05
10 B	4-01-0	4-00	4-00-7	4-05
7 B	4-00-0	4-00	4-00-7	4-10
8 B	4-00-7	4-00	4-00-0	4-10
8 B	4-00-0	4-01	4-00-0	4-10
21 B	4-01-10	4-02	4-00-0	4-10
8 B	4-00-0	4-00	4-00-0	4-10
8 B	4-00-10	4-00	4-00-0	4-10
34 A	4-00-10	4-00	4-00-0	4-10
7 A	4-00-10	4-00	4-00-0	4-10
4 A	4-01-10	4-00	4-00-0	4-10
15 A	4-01-10	4-10	4-10-4	4-10
9 A	4-10-0	4-10	4-10-4	4-10

## TABLE A. Continued

Service Year-yr 5 Years	Time On	Expanded OFF	Time OFF	Expanded OFF
36-8	5:12-8	5:12	12:22-8	8:22
8-8	5:12-1	5:12	12:22-8	8:22
27-8	5:22-8	5:22	8:22-1	8:22
8-8	8:22-8	8:22	8:22-1	8:22
27-8	8:22-8	8:22	8:22-1	8:22
27-8	7:02-8	7:02	7:02-8	7:02
8-8	7:02-8	7:02	7:02-8	7:02
27-8	7:12-8	7:12	7:12-8	7:12
27-8	8:22-1	8:22	8:22-8	8:22





TABLE 6  
ADDITIONAL FOUR RESPONSES TO YEMMARTON OF  
FINDS FROM TRIST RANCH

Revised Number & Weight	Time In	Number Out	Time Out	Revised Out
15 B	0-13-0	0-0-0	0-14-0	0-10
16 B	0-13-0	0-0-0	0-13-0	0-10
17 B	0-13-0	0-0-0	0-13-0	0-10
18 B	0-13-0	0-0-0	0-13-0	0-10
19 B	0-13-0	0-0-0	0-13-0	0-10
20 B	0-13-0	0-0-0	0-13-0	0-10
21 B	0-13-0	0-0-0	0-13-0	0-10
22 B	0-13-0	0-0-0	0-13-0	0-10
23 B	0-13-0	0-0-0	0-13-0	0-10
24 B	0-13-0	0-0-0	0-13-0	0-10
25 B	0-13-0	0-0-0	0-13-0	0-10
26 B	0-13-0	0-0-0	0-13-0	0-10
27 B	0-13-0	0-0-0	0-13-0	0-10
28 B	0-13-0	0-0-0	0-13-0	0-10
29 B	0-13-0	0-0-0	0-13-0	0-10
30 B	0-13-0	0-0-0	0-13-0	0-10
31 B	0-13-0	0-0-0	0-13-0	0-10
32 B	0-13-0	0-0-0	0-13-0	0-10
33 B	0-13-0	0-0-0	0-13-0	0-10
34 B	0-13-0	0-0-0	0-13-0	0-10
35 B	0-13-0	0-0-0	0-13-0	0-10
36 B	0-13-0	0-0-0	0-13-0	0-10
37 B	0-13-0	0-0-0	0-13-0	0-10
38 B	0-13-0	0-0-0	0-13-0	0-10
39 B	0-13-0	0-0-0	0-13-0	0-10
40 B	0-13-0	0-0-0	0-13-0	0-10
41 B	0-13-0	0-0-0	0-13-0	0-10
42 B	0-13-0	0-0-0	0-13-0	0-10
43 B	0-13-0	0-0-0	0-13-0	0-10
44 B	0-13-0	0-0-0	0-13-0	0-10
45 B	0-13-0	0-0-0	0-13-0	0-10
46 B	0-13-0	0-0-0	0-13-0	0-10
47 B	0-13-0	0-0-0	0-13-0	0-10
48 B	0-13-0	0-0-0	0-13-0	0-10
49 B	0-13-0	0-0-0	0-13-0	0-10
50 B	0-13-0	0-0-0	0-13-0	0-10
51 B	0-13-0	0-0-0	0-13-0	0-10
52 B	0-13-0	0-0-0	0-13-0	0-10
53 B	0-13-0	0-0-0	0-13-0	0-10
54 B	0-13-0	0-0-0	0-13-0	0-10
55 B	0-13-0	0-0-0	0-13-0	0-10
56 B	0-13-0	0-0-0	0-13-0	0-10
57 B	0-13-0	0-0-0	0-13-0	0-10
58 B	0-13-0	0-0-0	0-13-0	0-10
59 B	0-13-0	0-0-0	0-13-0	0-10
60 B	0-13-0	0-0-0	0-13-0	0-10
61 B	0-13-0	0-0-0	0-13-0	0-10
62 B	0-13-0	0-0-0	0-13-0	0-10
63 B	0-13-0	0-0-0	0-13-0	0-10
64 B	0-13-0	0-0-0	0-13-0	0-10
65 B	0-13-0	0-0-0	0-13-0	0-10
66 B	0-13-0	0-0-0	0-13-0	0-10
67 B	0-13-0	0-0-0	0-13-0	0-10
68 B	0-13-0	0-0-0	0-13-0	0-10
69 B	0-13-0	0-0-0	0-13-0	0-10
70 B	0-13-0	0-0-0	0-13-0	0-10
71 B	0-13-0	0-0-0	0-13-0	0-10
72 B	0-13-0	0-0-0	0-13-0	0-10
73 B	0-13-0	0-0-0	0-13-0	0-10
74 B	0-13-0	0-0-0	0-13-0	0-10
75 B	0-13-0	0-0-0	0-13-0	0-10
76 B	0-13-0	0-0-0	0-13-0	0-10
77 B	0-13-0	0-0-0	0-13-0	0-10
78 B	0-13-0	0-0-0	0-13-0	0-10
79 B	0-13-0	0-0-0	0-13-0	0-10
80 B	0-13-0	0-0-0	0-13-0	0-10
81 B	0-13-0	0-0-0	0-13-0	0-10
82 B	0-13-0	0-0-0	0-13-0	0-10
83 B	0-13-0	0-0-0	0-13-0	0-10
84 B	0-13-0	0-0-0	0-13-0	0-10
85 B	0-13-0	0-0-0	0-13-0	0-10
86 B	0-13-0	0-0-0	0-13-0	0-10
87 B	0-13-0	0-0-0	0-13-0	0-10
88 B	0-13-0	0-0-0	0-13-0	0-10
89 B	0-13-0	0-0-0	0-13-0	0-10
90 B	0-13-0	0-0-0	0-13-0	0-10
91 B	0-13-0	0-0-0	0-13-0	0-10
92 B	0-13-0	0-0-0	0-13-0	0-10
93 B	0-13-0	0-0-0	0-13-0	0-10
94 B	0-13-0	0-0-0	0-13-0	0-10
95 B	0-13-0	0-0-0	0-13-0	0-10
96 B	0-13-0	0-0-0	0-13-0	0-10
97 B	0-13-0	0-0-0	0-13-0	0-10
98 B	0-13-0	0-0-0	0-13-0	0-10
99 B	0-13-0	0-0-0	0-13-0	0-10
100 B	0-13-0	0-0-0	0-13-0	0-10

TABLE 3. - Continued

Service Vessel # 1949	Time in	Received Out	Time Out	Received Out
2 B	3:51:0	3:51	4:05:0	4:05
4 B	3:51:0	3:51	4:05:0	4:05
14 B	3:54:0	3:54	4:08:0	4:08
12 B	4:00:0	4:00	4:14:0	4:14
6 B	4:00:0	4:00	4:08:0	4:08
8 B	4:00:0	4:00	4:14:0	4:14
16 A	4:07:0	4:07	4:20:0	4:20
16 A	4:08:0	4:08	4:21:0	4:21
12 B	3:59:0	3:59	4:08:0	4:08
12 A	3:59:0	3:59	4:21:0	4:21
17 A	3:59:0	3:59	4:07:0	4:07
7 A	3:59:0	3:59	4:08:0	4:08
16 A	3:59:0	3:59	4:07:0	4:07
4 A	3:59:0	3:59	3:59:0	3:59
8 A	3:59:0	3:59	3:59:0	3:59
8 A	3:59:0	3:59	3:59:0	3:59
16 A	3:59:0	3:59	3:59:0	3:59
8 A	3:59:0	3:59	3:59:0	3:59
8 A	3:59:0	3:59	3:59:0	3:59
16 A	3:59:0	3:59	3:59:0	3:59
8 A	3:59:0	3:59	3:59:0	3:59
16 A	3:59:0	3:59	3:59:0	3:59
16 B	4:00:0	4:00	4:21:0	4:21
12 B	4:00:0	4:00	4:21:0	4:21

The third procedure was to go through the data, applying a correction factor to bring the starting points of all runs from 2, Salience Balance into line. This was necessary because when the data were made with the video timer, the equipment had to be started manually. Since times were defined on the tapes, by identifying a specific observable movement it was possible to determine the correction factor necessary to make the times synchronized for all tapes for that run. For 2, Salience Balance, the times defined on Audeline No's responses to the videotaped voice became the basis, with Audeline One's times for the tape again adding a correction factor of -4.5 (Table 1) and Audeline One's times for the videotaped voice adding a correction factor of -5.4 (Table 2). No correction factor was needed on the scores from Right Right, as they had corresponding starting times (Tables 4-8).

The fourth procedure consisted of rounding off the time of each response to the nearest tenth second (Tables 1-8). Since reaction times of individuals differ even in response to specific commands and since a more complicated process (verbalistic response) was being asked of these subjects, it seemed reasonable that to deal with data at a more discrete level, than seconds would not be pertinent to the present investigation.

The fifth procedure was to place the data in such order into bar graphs (Fig. 4-7). The data from 2 Salience Balance were graphed separately from the data from

















Time	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	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[illegible]









[illegible]

1





[illegible]

135





[illegible]

Figure 1









Right margin The graphs placed "Time in seconds" along the horizontal axis. On the vertical axis the data for each separate condition (live, video with prior exposure to live, and video only) were placed next to each other, condition by condition.

#### Testing procedure and results

Of interest to the present study were three comparisons involving A Judgment Balance which would determine if audience response to interpersonal distance in a live theatre was different from audience responses to videotaped distance as a videotape of that same live theatre scene. The three comparisons were as follows:

Audience 1 live compared with Audience 1 Video

Audience 1 live compared with Audience 21 Video

Audience 1 Video compared with Audience 21 Video

The third of these comparisons was necessary to see how videotape responses of an audience with prior exposure to the live scene will compare with the responses of an audience with no prior exposure to the live scene.

For all three comparisons the data were scored to see whether there were significant differences at the .05 level or better in the responses between conditions. To facilitate data analysis the responses of 'too far apart' and 'too close together' were combined into the 'not ok' category.<sup>2</sup>

<sup>2</sup>Significant advice was provided by Bob J. Kim, Professor of Statistics, South Dakota State University, Brookings, SD

The chi-square test,<sup>4</sup> with the Yates Correction Factor<sup>5</sup> was applied to the data of each record of the series being compared as a means of determining the degree of response similarity. In addition, the Fisher Exact Probability Test was applied, in particular to all the data where the expected frequencies were less than five in one or more of the cells of a 2 x 2 contingency table (where the chi-square test could not, therefore, be used).<sup>6</sup> The Fisher Modification was found when the same compared total in a 2 x 2 contingency table could result from more extreme outcomes than those yielded by the observed responses.<sup>7</sup> In cases where the probability of the more extreme outcomes was found to be less than .05 (the level of significance being used in this study) and the probability of the Fisher test was found to be greater than .05, then the Fisher test was computed and a table of random numbers consulted.<sup>7</sup> The results of each of these statistical procedures are provided in Appendices E, F, and G.

<sup>4</sup>See Vera Casuso, Statistics, 2d. ed., Macmillan Company, New York, 1954, pp. 114-127.

<sup>5</sup>See R. A. Fisher, Statistical Methods for Research Workers (1934 ed., rev.), New York: Oliver Publishing Company, 1934, pp. 41-45.

<sup>6</sup>See Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (1956 ed.), New York: McGraw-Hill Book Company, 1956, pp. 89-112.

<sup>7</sup>Table, pp. 181-204.

<sup>8</sup>Table.

Tables 7, 8, and 9 summarize the results, indicating on which attitude in each of the three comparisons there were significant differences at the .05 level or better. Thus, in the comparison of Audience I Live with Audience I Video, 7 out of 143 seconds, or 4.96% of the time, there was a significant difference. In the comparison of Audience I Live with Audience II Video, 114 out of 547 seconds, or 20.84% of the time, there was a significant difference. In the comparison of Audience I Video with Audience II Video, 187 out of 547 seconds, or 34.19% of the time, there was a significant difference.

The same statistical procedures were applied to the following three comparisons from High School:

Audience III Live compared with Audience III Video

Audience III Live compared with Audience IV Video

Audience III Video compared with Audience IV Video

The results of each of the statistical procedures are provided in Appendices 4, 5, and 6.<sup>3</sup>

Tables 10, 11, and 12 summarize the results, indicating on which attitude in each of the three comparisons there were significant differences at the .05 level or better. Thus, in the comparison of Audience III Live with Audience III Video, 38 out of 128 seconds, or 29.69% of the time,

<sup>3</sup>Prepared advice was provided by Charles J. Wendenweil, Associate Professor of Economics, South Dakota State University, Brookings, SD.

there was a significant difference. In the comparison of Audience III Live with Audience IV Video, 47 out of 110 seconds, or 42.73% of the time, there was a significant difference. In the comparison of Audience III Video with Audience IV Video, 18 out of 110 seconds, or 16.36% of the time, there was a significant difference.

TABLE 1  
 ADVANCE 1 LIFE COMPARED WITH ADVANCE 1 VIDEO

<u>Number of Comparison Subjects</u>	<u>Significance at 5% Level of Error Using Two-Tailed</u>
1	P .05
1	P .40
1	P .11
1	P .12
3	P .00 - P .01

Note: This comparison is drawn from the data available in Appendix C.

TABLE 4  
 AIRBORNE 1:1750 COMPARISON WITH AIRBORNE II 70000

<u>Number of Comparisons</u> <u>Required</u>	<u>Significant at .05 level at</u> <u>Airborne I:1750 with Airborne</u>
5	0.10 - 0.54
6	1.00 - 1.88
76	1.00 - 1.34
7	1.00 - 1.41
8	1.44
10	0.10 - 1.41
9	0.10
4	0.10 - 0.10
3	0.10 - 0.10
11	0.10 - 0.10
1	0.10
40	0.10 - 0.10
3	0.10 - 0.10
4	0.10 - 0.10
7	0.10 - 0.10
1	0.10
8	0.10 - 0.10
1	0.10
1	0.10
1	0.10 - 0.10

Note: This comparison is drawn from the data available in Appendix G.

TABLE 9  
 AIRCRAFT 1 VIDEO COMPARED WITH AIRCRAFT 21 VIDEO

<u>Number of Comparative Segments</u>	<u>Percentage of Hits based on Ratio of (1/24) to (2/21)</u>
0	0/14 = 0/00
1	1/00 = 1/00
2	1/00
3	2/00 = 1/00
4	1/17 = 1/00
5	1/00
6	1/10
7	1/10 = 1/10
8	0/00 = 0/10
9	1/00
10	0/00 = 0/00
11	0/00
12	0/00 = 0/00
13	0/00
14	0/00 = 0/00
15	0/00 = 0/00
16	0/00
17	0/00 = 0/00
18	0/00
19	0/00
20	0/00
21	0/00
22	0/00
23	0/00
24	0/00
25	0/00
26	0/00
27	0/00
28	0/00
29	0/00
30	0/00
31	0/00
32	0/00
33	0/00
34	0/00
35	0/00
36	0/00
37	0/00
38	0/00
39	0/00
40	0/00
41	0/00
42	0/00
43	0/00
44	0/00
45	0/00
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81	0/00
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83	0/00
84	0/00
85	0/00
86	0/00
87	0/00
88	0/00
89	0/00
90	0/00
91	0/00
92	0/00
93	0/00
94	0/00
95	0/00
96	0/00
97	0/00
98	0/00
99	0/00
100	0/00

Note: This comparison is based on the data available in Appendix B.

TABLE 30  
 AGE-SEX 111 LIFE COMPARED WITH AGE-SEX 112 VIDEO

<u>Number of Compressive</u> <u>Strokes</u>	<u>Percentage of Total of</u> <u>Stroke Time (Age-Sex 111)</u>
0	0.14 - 0.18
1	0.18
2	0.23 - 0.28
30	0.29 - 0.34
1	1.00
1	0.18
2	0.27
1	0.13
1	0.20
1	0.23
1	0.28

Note: This comparison is drawn from the data available in Appendix F.



TABLE 12  
 APPROPRIATE LIVE COMPARISON WITH ACQUISITION OF VIDEO

<u>Number of Comparisons</u> <u>Acquired</u>	<u>Significance at .05 Level at</u> <u>Entry Time Point (0.0001)</u>
10	0.001 - 0.04
5	0.10 - 0.34
6	0.40 - 0.47
2	0.48 - 0.80
0	0.84 - 0.91
0	0.95 - 0.97
0	0.99 - 0.99
1	2.00
2	5.57
1	9.55 - 9.99
1	9.99
0	9.99 - 9.99

Note: This comparison is drawn from the data available in Appendix B.

TABLE II  
ABSENCE IN TIME COMPARED WITH ABSENCE BY TIME

<u>Number of Experiments</u> <u>by Time</u>	<u>Significance at .05 Level of</u> <u>Significance</u>
3	1.42
4	2.04 - 2.52
5	2.24 - 2.56
6	2.24 - 2.56
7	3.27
8	4.11
9	5.34
10	6.02

Note: This comparison is drawn from the data available in Appendix B.

DRAFT  
A. HILLIS AND RAY BARNETT  
ON TEACHING VIDEOSCAPES

Interpretation of Significant Findings and their Implications

From the results (Tables 7-12), the conclusion may be drawn that students respond to interpretational definitions as if the videotapes of scenes will significantly differ for the 10 items or leading four questions response to item personal collapse on videotapes of the same theatre scenes. For a clearer view of the potential effects of this significant difference in the teaching of scenes and concepts, West 1969, a more detailed consideration of the results is necessary.

The first analysis yielded a result by usual designations of whether a significant difference existed between the two score responses being compared, with the results noted in terms of percentage points in Table 7-11.

With the pattern of the results<sup>2</sup> from A. Hillis and Ray Barnett

<sup>2</sup>In A. Hillis and Ray Barnett the comparison of the experimental group with the control group to the videotapes scenes had the greatest number of answers of significant differences, while the comparison of the experimental group to the live and videotaped scenes had the least number of answers of significant differences. In Smith 1969, on the other hand, the comparison of the experimental group to the live scenes with the videotaped scenes to the videotaped scenes had the greatest number of answers of significant differences, while the comparison of the experimental and control groups to the videotaped scenes had the least number of answers of significant differences (see Tables 7-12).

the set held with the Right Watch, as all the comparisons there were at least one second longer when there was a significant difference. It is possible that instances of only one second duration might be discussed in class, but since teachers generally focus discussion on segments of dramatic action or activity of longer duration, it seems probable looking at the number of significant consecutive seconds of response in each comparison, therefore, will provide more relevant information for consideration by teachers.

If significant differences are only considered where they exist for at least ten consecutive seconds, for example, then at least one instance exists in four comparisons when that criterion is met (Table III). In fact, in two instances for over half a minute straight (20 seconds and 41 seconds) there were significant differences in audience response to A. Polidoro Polidoro. Considering the scene lengths were roughly nine minutes (9:00 for A. Polidoro Polidoro and 8:14 for Right Watch), these intervals of disagreement between audiences have definite implications for sampling methodology.

The findings of this study indicate that an audience responding to interpersonal distance in a live scene could be anticipated to respond somewhat differently to interpersonal distance when seen in a videotape replay of that same scene. Disagreements could be expected to arise between live scenes in a nine night live interpersonal distance and in a videotape replay as opposed to live other members

TABLE 10  
DISTANCES OF SIGNIFICANT DIFFERENCES AT THE 1% LEVEL  
ON LETTER FOR TEA OR FIVE COMBUSTIBLE STAGES

2 L compared with 2 F --	26 sec.	1.88 = 1.54
	16 sec.	1.88 = 2.42
	13 sec.	4.21 = 4.50
	48 sec.	4.40 = 5.18
2 F compared with 2 F --	26 sec.	1.25 = 1.44
	13 sec.	4.82 = 4.93
	41 sec.	4.34 = 5.12
	24 sec.	7.14 = 7.29
2 L compared with 2 F --	26 sec.	0.19 = 0.54
2 L compared with 4 F --	21 sec.	0.16 = 0.24

Note: In the above table, Arabic numerals followed by "L" indicate the distance L using the performance line, while Arabic numerals followed by "F" indicate the distance F using the performance as reference.

of the class who had seen the scene live first might view the same replay. For a student who saw the scene live and then on videotape he discusses it with another who had not. First seen in live, differences in response would also be expected. These conclusions are not meant to serve as a general edict against using videotape in teaching writing and discussing classes (it may well be valid, for example, for showing consistency of characterization), but it is hoped it will discourage reliance on videotape recording of scenes as an instructional tool for teaching about [interpersonal] discourse between writers.

APPENDIX A  
CONTINUED FROM  
PAGE 100

**Citation:** David Allen, *A. MICHAEL BRIDGES*. New York: Macmillan, 1991. Pp. 1-37.

AGNES: What I find most astonishing--aside from that belief of mine, which never occurs to surprise me by the very fact of its astonishing lack of implementation, the belief that I might have multiplied my sup-  
pose to mind one day, not that I suppose I am about to, or at even . . . hardly . . .

TONIA: There is no other woman in earth, Agnes.

AGNES: . . . For I'm not this earth, surely there is no yet beyond . . . happening, when people knowing of the nothing making the bottom and/or and I think that is the only understanding thing, and, the . . . knowing a stranger in . . . the world, with . . . understood, for I never saw it as vision, only a driving--what are you looking for, Tonia?

TONIA: We will all go and before you. The universe.

AGNES: Thank you, darling. But I could never do it--as said--for what would become of you? Well, what I find most astonishing, aside, as I said, from that specu-  
tion--and I wonder, too, something, if I am the only one of you to admit to it, not that I may go mad, but that each of you wonders if each of you might not--why we earth do you not understand?

TONIA: I thought it might be nice.

AGNES: Surely I will be trained. It is supposed to be harder--the speculation, or the assumption, I suppose, that if it occurs in you that you might be, then you are not! But I've never been much comforted by its it follows, to my mind, that since I speculate I might, then dry, or early evening I think were likely--some other such--go over and, then I very well might. Some other such. Tonia at her desk, looks up from all those other hills, and sees his AGNES, and at a belief, showing the others as her dream . . .

TONIA: Again?

AGNES: Yes, Agnes is-by-the-way, her mouth full of rhythm, but what with, and, nothing to do with the part of thing but her has a her somewhere, and the hope, now to Tonia, say, and give in the good you, and live to be a hundred and four. Thank you, darling.



TONIAS: Capers is sickly, too.

AGNES: Yes, but it's nice. Sit by me, but

TONIAS: To my sad lady, without laughing.

AGNES: And, of course, I haven't seen the girls since Jella's marriage. Are you comfortable?

TONIAS: For a little.

AGNES: What circumstances are especially kind or unkind--  
either banishing thoughts, and fear, how easily all unkindly  
speculation that I might some day become an embarrassment  
to you . . . what I find most astonishing in this world,  
and with all my fears . . . is Claire.

TONIAS: Claire? What?

AGNES: That young--he says she's sister, or not--you  
he is . . . well, I don't want to see an unkind word,  
"since we're deep here, aren't we?"

TONIAS: Why?

AGNES: As the saying has it, the one thing sharper than  
a serpent's tooth is a sister's ingratitude.

TONIAS: The saying does not have it that way.

AGNES: Would. Why are you asking?

TONIAS: It's getting uncomfortable.

AGNES: Things get hot, soon off, huh? Yes?

TONIAS: I'm not as young as either of us once was.

AGNES: I'm as young as the day I married you--though I'm  
certain I don't look it--because you're a very good  
husband . . . most of the time. But I was talking  
about Claire, or was beginning to.

TONIAS: Yes, you were.

AGNES: If I were to kiss the hemstitch of my husband--if I had a black pad and a sword to spare--that brooding my shoulders with, with the possible exception of Julia's trouble with Herring, would be your one wish for satisfaction, I think, or rather, that's more like your own relief before of collecting that slave . . .

THELMA: Stop it, Agnes.

AGNES: Are you going to throw something at me? Your glass? My goodness, I hope not . . . that awful necklace all over everything.

THELMA: No.

AGNES: What then?

THELMA: I shall sit very quietly . . .

AGNES: . . . as always . . .

THELMA: . . . yes, and I shall tell you to apologize to your sister for what I wish to know till you I thought it best . . .

AGNES: Apologizing? No how? To Eleanor? I have spent my whole life apologizing for how I will not double my humiliations by apologizing to her.

THELMA: One does not apologize to those for whom one says?

AGNES: No.

THELMA: Societal, but one of the rules of an apologist . . .

AGNES: An apologist, I thought.

THELMA: An apologist to quickly explain, and you . . .

AGNES: . . . and I am greatly nervous. Yes!

THELMA: I fear so.

AGNES: To revert specifically from Clara to . . . her effects, what would you do were I to . . . spill my necklace?

THELMA: Put you in a big somewhere, tell the house and move to Tucson. Fine in the lot you had lived forever.

ADAM: Hmm, I bet you would.

THOMAS: Sorry, though.

ADAM: Oh, I'll try. It won't be simple psychosis, though, I know that. I've tried so hard, so . . . well, you know how little I enjoy psychosis, I can't even leave my wife except in the most celebrations of success, and I find that both joy and sorrow work okay . . . remains as an urge . . . really, again, within that month, a feeling rather than a psychosis. There are no symptoms in my life . . . not stated. It is a feeling, pleasant lead . . . verbal, my darling, thank you.

THOMAS: We do what we can.

ADAM: Our minds. If we should ever go back to, have a great mind, join things, we will have that too. In fact, we do what we can--on your mind, even the most, maybe we could do it in the mind, as well.

THOMAS: Do you think I should go to Claire's room?

ADAM: No, either she will be done, or not.

THOMAS: Do do what we can?

ADAM: Of course. No, it will not be simple psychosis, schizophrenia, on the other hand, is far more likely--even given the unhappiness. I believe it was the character induced . . . of all else should fail, if sorry, such as it is, should leave you mad. There are times when I think it would be so . . . proper, if we could take a pill--or even inject--just . . . please.

THOMAS: You should take drugs, we don't.

ADAM: Ah, but those are temporary, even although it is a repeated temporary . . . nothing. I am concerned with you . . . but more relief. And I am not compulsive--like . . . like some . . . like our dear Claire, say.

THOMAS: My kind. Please?

AGNES: I think I should want to have it fully . . . even on the chance I could get . . . gone back. Wouldn't that be terrible, though? To have done it, without, if particularly looked unfavorably and the home was there? May be able to come back? May and you put no engine in the way again?

THOMAS: Oh . . . I'm sorry. . . .

AGNES: I've got a visitor tonight: I'm a boarder; my room located in the place, all the winter there, and very pleasant.

THOMAS: I thought Clara was much better tonight. I didn't see any need for you to give her such a going-over.

AGNES: Clara was not better tonight. Honestly, Thomas!

THOMAS: I thought she was.

AGNES: Well, she was not.

THOMAS: Don't . . .

AGNES: Thank you. I have decided, all things considered, that I shall not refuse, that all the years we have put up with each other's will and certainly have shared all each other's company, and I promise you as well that I shall think good thoughts—charitable ones, positive to work off selfishness, should it come by—, unresentful.

THOMAS: You mean I have no hope of success?

AGNES: None.

THOMAS: Well . . .

AGNES: You have hope, really, of growing even older than you are in the company of your steady wife, your splendid sister-in-law and occasional visits . . . I have not particularly said. That is what you have, my dear Thomas. Will it do?

THOMAS: It will do.

AGNES: I've never doubted that it would. Back.

APPENDIX B  
OPERATING CONCEPTS  
OF THE SYSTEM

REMARKS: Louis L. Fletcher, English Syntax (New York: Random House, 1971), pp. 1-11.

JENN: Please -- for your own, can you have what this is for?

ELaine: Oh . . . I'm sorry, did I wake you, dear?

JENN: No, you shocked a punk? Another one? What's happening to you, Elaine?

ELaine: No? Nothing . . . I couldn't sleep.

JENN: Come on! It's been three nights in a row. Cigarette butts all over the place . . . Granddad's quaking . . .

ELaine: It's just my old grandmother's inherited. Only her is. Granddaddy suffered from it. He was night owl, most people.

JENN: Elaine . . . I've heard all that before . . . What's the problem? No?

ELaine: Of course not, darling.

JENN: I couldn't make it home any earlier for dinner.

ELaine: I understood that, dear.

JENN: It isn't Elaine, is it?

ELaine: Elaine--?

JENN: Well, she's beginning to get an egg nerve . . .

ELaine: She's been nothing but a darling . . . I've loved having her--

JENN: Then what is it? Tomorrow isn't scheduled. You've always had a minute . . . Is it Carl? That bastard . . .?

ELaine: O-Carl?

JENN: Elaine said you'd been nothing about her

ELaine: That's accurate. She brought him up. I didn't. Look, you're a day person and I'm a night person. When you go to bed, you fall asleep like a log. Not I--well, sometimes--I'm very much up I--and swallow the pill, right every the Goddam night up. The more he goes. And I'm a girl in discipline standing on the entrance to a physical bathroom . . . But I can't go to a hell's workup . . .

JOHN: Okay . . . okay. Something's got to be done about you, Elaine . . .

ELAINE: What? Just bundle me off to Switzerland?

JOHN: Well, why not try it? Nothing else seems to work. It would be a vacation. What's so funny?

ELAINE: Yes. You need a vacation, darling. Please. Stop prowling around. I'm perfectly all right.

JOHN: Then what is it?

ELAINE: Nothing, absolutely nothing. Don't make so much of it--really, dear. I'll end up thinking I'm some sort of freak.

JOHN: Oh, the hell with it, Elaine . . .

ELAINE: John, darling, you're tired, I'm tired. But if there's something you want to talk about . . . anything special . . . then let's just stay down here for a little while together. I'll make some coffee, turn the old tape. And I won't smile. It might help--both of us . . .

JOHN: I'm sorry . . . but it's late, and I'm hungry. If you don't mind--that was a pretty lousy dinner Elaine cooked up tonight.

ELAINE: I thought you were dining . . .

JOHN: Care for anything? Glass of milk maybe?

ELAINE: No thanks.

JOHN: Well, I'm starved.

ELAINE: John . . . hold on . . . please.

JOHN: Hello . . . What the hell is the matter with you? You're like me. You're shaking. Here--put this over you. Was the hell's been doing with this thermostat?

ELAINE: John! John--will you come up here? Please--right away, please! John! John! John, will you please come up here? John! JOHN!

JOHN: Now, what in God's name! . . . What is it? What's the matter?

ELAINE: Oh John, oh, John, it's horrible! It's horrible!

JOHN: What? What is?

ELAINE: Just look out that window, please. It's--it's horrible.

JOHN: What on hell are you talking about?

ELAINE: Right across . . . where the shade's up . . . Oh, my God. They've pulled it down. Did you see it? Did you see it?

JOHN: What?

ELAINE: A--dead man . . . He was sitting there with his eyes wide open. Dead. Dead. Dead.

JOHN: Oh, my God, what kind of crazy--

ELAINE: He was there, John. The shade went up just as I was lighting a cigarette. I saw him, just sitting there. His head was all loose and wobbly, his eyes were closed. They had this glassy stare. That were looking at me.

JOHN: Now, wait a minute, wait a minute. That is wild. How do you know the man was dead?

ELAINE: Well, I've seen dead people before. He was bleeding.

JOHN: Bleeding? From where?

ELAINE: His mouth. There was this trickle of blood like a dark water in the moonlight. I grabbed the dryer . . . I'm going to call the police. We've got to rush away . . .

JOHN: No, wait a second. Take it easy. Let's not get carried away. I'm perfectly willing to call, but let's get some things straight.

ELAINE: John, we can't be like those people on the newspaper who watch people murdered outside their windows.

JOHN: You're sure he wasn't an assassin? The moonlight or shadow--?



BLAIR: He was perfectly swell. That shade's never moved in all the months we've been here. Oh please, let's call. We're waiting here. These people will get mad.

JOHN: How old was this man?

BLAIR: Oh-middle-aged. And his hair looked sort of silver in the sunlight. He was sitting in a big wing chair.

JOHN: A wing chair?

BLAIR: Yes, definitely. I could see the arm and the high curved back. Like that one, sort of. Only sort of white . . . some sort of green drapery material.

JOHN: Green drapery? Is that strange?

BLAIR: It's not that far away. I notice each change. Let's call. We won't you wait?

JOHN: Okay, okay. Hello, I'm calling to report a body, a dead body, my friend? The Lips Day district, 118 East Thirtieth Street Manhattan. Murder, John Macdonald.

BLAIR: All slumped down with his head back, staring at us, with those glassy eyes.

JOHN: Hello. My name is John Macdonald. I live in Manhattan on East Thirtieth Street. And my wife thinks--

BLAIR: Thanks, John. I see him.

JOHN: --she's just seen a man's dead body in a building opposite the rear of our house. Look. Can't we get on with it, Margaret?

BLAIR: What's he saying?

JOHN: Hello, Helen. He's getting no response . . . Hello. Hello. Oh, sorry. My name is Macdonald, Manhattan. 118 East Thirtieth Street, Manhattan. I'm calling to report what may have been a murder . . . At least my wife says she saw this dead man in a basement window--an abandoned basement facing the rear of our house. He was sitting in a chair . . .

BLAIR: A green wing chair.

JOHN: A green wing chair, standing from the north . . . a middle-aged man. What? No, not now. The shade's down. Talk. No. My wife said the shade was up, and then it went down. Come on, investment . . . That's when my wife left, and she's very, very sure. Question. What? What? No. East Thirtieth Street . . . Yes. That'd put it on Twenty-Ninth Street, south of the park . . . Right . . . I'm on Wall Street . . . Securities . . . Securities . . . What . . . Yes . . . Right . . . Got it. Okay, well, thank a lot. Goodnight.

BLAKE: Is he sending somebody?

JOHN: Yes, but you'd think you'd committed a crime. Some guy's coming here to talk to me.

BLAKE: How? But it happened over there.

JOHN: Well, I don't run the police department. They send somebody here--they send somebody there. Well, I'd better get some pants on. Just take it easy, huh?

ATTACHED C  
ABSTRACT ONE LINE  
CONTINUED WITH  
ABSTRACT ONE VIDEO

Exp<sup>2</sup>

A<sub>1</sub>, B<sub>1</sub>, C<sub>1</sub>, D<sub>1</sub> = true value in a 2 x 2 contingency table

Abstric is followed by 'N' = 4 of outcomes (10th video)

Abstric is followed by 'Y' = 4 of outcomes (video video)

$\chi^2$  = the chi-square test statistic (where the critical value at the .05 level when df = 1 is 3.84)

Fisher = the Fisher exact probability

Techer = the exact probability with the Techer Substitution

----- = not applicable













[illegible]









Year	Grade	Level	Score	Teacher	Student	Teacher's Rating	Student's Rating	Significant in all or better
2000	1	1	100	100	100	100	100	100
2001	1	1	100	100	100	100	100	100
2002	1	1	100	100	100	100	100	100
2003	1	1	100	100	100	100	100	100
2004	1	1	100	100	100	100	100	100
2005	1	1	100	100	100	100	100	100
2006	1	1	100	100	100	100	100	100
2007	1	1	100	100	100	100	100	100
2008	1	1	100	100	100	100	100	100
2009	1	1	100	100	100	100	100	100
2010	1	1	100	100	100	100	100	100
2011	1	1	100	100	100	100	100	100
2012	1	1	100	100	100	100	100	100
2013	1	1	100	100	100	100	100	100
2014	1	1	100	100	100	100	100	100
2015	1	1	100	100	100	100	100	100
2016	1	1	100	100	100	100	100	100
2017	1	1	100	100	100	100	100	100
2018	1	1	100	100	100	100	100	100
2019	1	1	100	100	100	100	100	100
2020	1	1	100	100	100	100	100	100
2021	1	1	100	100	100	100	100	100
2022	1	1	100	100	100	100	100	100
2023	1	1	100	100	100	100	100	100
2024	1	1	100	100	100	100	100	100
2025	1	1	100	100	100	100	100	100
2026	1	1	100	100	100	100	100	100
2027	1	1	100	100	100	100	100	100
2028	1	1	100	100	100	100	100	100
2029	1	1	100	100	100	100	100	100
2030	1	1	100	100	100	100	100	100
2031	1	1	100	100	100	100	100	100
2032	1	1	100	100	100	100	100	100
2033	1	1	100	100	100	100	100	100
2034	1	1	100	100	100	100	100	100
2035	1	1	100	100	100	100	100	100
2036	1	1	100	100	100	100	100	100
2037	1	1	100	100	100	100	100	100
2038	1	1	100	100	100	100	100	100
2039	1	1	100	100	100	100	100	100
2040	1	1	100	100	100	100	100	100
2041	1	1	100	100	100	100	100	100
2042	1	1	100	100	100	100	100	100
2043	1	1	100	100	100	100	100	100
2044	1	1	100	100	100	100	100	100
2045	1	1	100	100	100	100	100	100
2046	1	1	100	100	100	100	100	100
2047	1	1	100	100	100	100	100	100
2048	1	1	100	100	100	100	100	100
2049	1	1	100	100	100	100	100	100
2050	1	1	100	100	100	100	100	100
2051	1	1	100	100	100	100	100	100
2052	1	1	100	100	100	100	100	100
2053	1	1	100	100	100	100	100	100

[illegible]

[illegible]



Case	Year	Age	Sex	Height	Weight	Body Mass Index	Waist Circumference	Triceps Skinfold Thickness	Diastolic Blood Pressure	Systolic Blood Pressure	Heart Rate	Respiratory Rate	Temperature	Heart Rate Variability	Respiratory Rate Variability	Temperature Variability	Heart Rate Variability Coefficient	Respiratory Rate Variability Coefficient	Temperature Variability Coefficient	Heart Rate Variability Coefficient of Variation	Respiratory Rate Variability Coefficient of Variation	Temperature Variability Coefficient of Variation
1	2010	25	M	175	75	24.2	95	12	80	120	70	18	36.5	10	15	0.5	0.05	0.08	0.01	0.005	0.008	0.001
2	2011	26	F	165	65	23.8	85	11	75	115	65	17	35.5	9	14	0.4	0.04	0.07	0.01	0.004	0.007	0.001
3	2012	27	M	180	80	24.4	100	13	85	130	75	19	37.5	11	16	0.6	0.06	0.09	0.01	0.006	0.009	0.001
4	2013	28	F	170	70	23.9	90	12	80	125	70	18	36.5	10	15	0.5	0.05	0.08	0.01	0.005	0.008	0.001
5	2014	29	M	185	85	24.5	105	14	90	140	80	20	38.5	12	17	0.7	0.07	0.10	0.01	0.007	0.010	0.001
6	2015	30	F	175	75	23.9	95	13	85	135	75	19	37.5	11	16	0.6	0.06	0.09	0.01	0.006	0.009	0.001
7	2016	31	M	190	90	24.6	110	15	95	150	85	21	39.5	13	18	0.8	0.08	0.11	0.01	0.008	0.011	0.001
8	2017	32	F	180	80	24.1	100	14	90	145	80	20	38.5	12	17	0.7	0.07	0.10	0.01	0.007	0.010	0.001
9	2018	33	M	195	95	24.7	115	16	100	160	90	22	40.5	14	19	0.9	0.09	0.12	0.01	0.009	0.012	0.001
10	2019	34	F	185	85	24.2	105	15	95	155	85	21	39.5	13	18	0.8	0.08	0.11	0.01	0.008	0.011	0.001
11	2020	35	M	200	100	24.8	120	17	105	170	95	23	41.5	15	20	1.0	0.10	0.13	0.01	0.010	0.013	0.001
12	2021	36	F	190	90	24.3	110	16	100	165	90	22	40.5	14	19	0.9	0.09	0.12	0.01	0.009	0.012	0.001
13	2022	37	M	205	105	24.9	125	18	110	175	100	24	42.5	16	21	1.1	0.11	0.14	0.01	0.011	0.014	0.001
14	2023	38	F	195	95	24.4	115	17	105	170	95	23	41.5	15	20	1.0	0.10	0.13	0.01	0.010	0.013	0.001
15	2024	39	M	210	110	25.0	130	19	115	185	105	25	43.5	17	22	1.2	0.12	0.15	0.01	0.012	0.015	0.001
16	2025	40	F	200	100	24.5	120	18	110	175	100	24	42.5	16	21	1.1	0.11	0.14	0.01	0.011	0.014	0.001
17	2026	41	M	215	115	25.1	135	20	120	190	110	26	44.5	18	23	1.3	0.13	0.16	0.01	0.013	0.016	0.001
18	2027	42	F	205	105	24.6	125	19	115	180	105	25	43.5	17	22	1.2	0.12	0.15	0.01	0.012	0.015	0.001
19	2028	43	M	220	120	25.2	140	21	125	200	115	27	45.5	19	24	1.4	0.14	0.17	0.01	0.014	0.017	0.001
20	2029	44	F	210	110	24.7	130	20	120	190	110	26	44.5	18	23	1.3	0.13	0.16	0.01	0.013	0.016	0.001
21	2030	45	M	225	125	25.3	145	22	130	205	120	28	46.5	20	25	1.5	0.15	0.18	0.01	0.015	0.018	0.001

Region/State	Year	Population (millions)	Urban Population (millions)	Urban % of Total	Population Density (per sq km)	Urban Density (per sq km)	Rural Density (per sq km)	Population Growth Rate (%)	Urban Growth Rate (%)	Rural Growth Rate (%)
Algeria	1980	10.0	4.0	40	100	200	50	2.5	3.5	1.5
Algeria	1985	11.0	4.5	41	110	210	55	2.8	3.8	1.8
Algeria	1990	12.0	5.0	42	120	220	60	3.0	4.0	2.0
Algeria	1995	13.0	5.5	42	130	230	65	3.2	4.2	2.2
Algeria	2000	14.0	6.0	43	140	240	70	3.5	4.5	2.5
Algeria	2005	15.0	6.5	43	150	250	75	3.8	4.8	2.8
Algeria	2010	16.0	7.0	44	160	260	80	4.0	5.0	3.0
Algeria	2015	17.0	7.5	44	170	270	85	4.2	5.2	3.2
Algeria	2020	18.0	8.0	44	180	280	90	4.5	5.5	3.5
Algeria	2025	19.0	8.5	45	190	290	95	4.8	5.8	3.8
Algeria	2030	20.0	9.0	45	200	300	100	5.0	6.0	4.0
Algeria	2035	21.0	9.5	45	210	310	105	5.2	6.2	4.2
Algeria	2040	22.0	10.0	45	220	320	110	5.5	6.5	4.5
Algeria	2045	23.0	10.5	46	230	330	115	5.8	6.8	4.8
Algeria	2050	24.0	11.0	46	240	340	120	6.0	7.0	5.0
Algeria	2055	25.0	11.5	46	250	350	125	6.2	7.2	5.2
Algeria	2060	26.0	12.0	46	260	360	130	6.5	7.5	5.5
Algeria	2065	27.0	12.5	46	270	370	135	6.8	7.8	5.8
Algeria	2070	28.0	13.0	46	280	380	140	7.0	8.0	6.0
Algeria	2075	29.0	13.5	47	290	390	145	7.2	8.2	6.2
Algeria	2080	30.0	14.0	47	300	400	150	7.5	8.5	6.5
Algeria	2085	31.0	14.5	47	310	410	155	7.8	8.8	6.8
Algeria	2090	32.0	15.0	47	320	420	160	8.0	9.0	7.0
Algeria	2095	33.0	15.5	47	330	430	165	8.2	9.2	7.2
Algeria	2100	34.0	16.0	47	340	440	170	8.5	9.5	7.5
Algeria	2105	35.0	16.5	47	350	450	175	8.8	9.8	7.8
Algeria	2110	36.0	17.0	47	360	460	180	9.0	10.0	8.0
Algeria	2115	37.0	17.5	47	370	470	185	9.2	10.2	8.2
Algeria	2120	38.0	18.0	47	380	480	190	9.5	10.5	8.5
Algeria	2125	39.0	18.5	47	390	490	195	9.8	10.8	8.8
Algeria	2130	40.0	19.0	47	400	500	200	10.0	11.0	9.0
Algeria	2135	41.0	19.5	48	410	510	205	10.2	11.2	9.2
Algeria	2140	42.0	20.0	48	420	520	210	10.5	11.5	9.5
Algeria	2145	43.0	20.5	48	430	530	215	10.8	11.8	9.8
Algeria	2150	44.0	21.0	48	440	540	220	11.0	12.0	10.0
Algeria	2155	45.0	21.5	48	450	550	225	11.2	12.2	10.2
Algeria	2160	46.0	22.0	48	460	560	230			







[illegible]



APPENDIX B  
SCIENCE ONE LIVE  
COMPLAND WITH  
SCIENCE TWO VIDEO

Key:

A, B, C, D = four cells in a 2 x 2 contingency table

Arrows to columns by "L" = 0 of columns (live versus)

Arrows to columns by "M" = 0 of columns (live versus)

$\chi^2$  = the chi-square test statistic (where the critical  
value at the .05 level when df = 1 is 3.84)

Fisher = the Fisher exact probability

Yates = the exact probability with the Fisher modification

----- = not applicable







[illegible]

Year	Age	Sex	Weight	Length	Wing	Tail	Tarsus	Bill	Claw	Significant
1910	1	M	100	180	110	100	100	100	100	100
1910	1	F	95	175	105	95	95	95	95	100
1910	1	M	105	185	115	105	105	105	105	100
1910	1	F	90	170	100	90	90	90	90	100
1910	1	M	110	190	120	110	110	110	110	100
1910	1	F	85	165	95	85	85	85	85	100
1910	1	M	115	195	125	115	115	115	115	100
1910	1	F	80	160	90	80	80	80	80	100
1910	1	M	120	200	130	120	120	120	120	100
1910	1	F	75	155	85	75	75	75	75	100
1910	1	M	125	205	135	125	125	125	125	100
1910	1	F	70	150	80	70	70	70	70	100
1910	1	M	130	210	140	130	130	130	130	100
1910	1	F	65	145	75	65	65	65	65	100
1910	1	M	135	215	145	135	135	135	135	100
1910	1	F	60	140	70	60	60	60	60	100
1910	1	M	140	220	150	140	140	140	140	100
1910	1	F	55	135	65	55	55	55	55	100
1910	1	M	145	225	155	145	145	145	145	100
1910	1	F	50	130	60	50	50	50	50	100
1910	1	M	150	230	160	150	150	150	150	100
1910	1	F	45	125	55	45	45	45	45	100
1910	1	M	155	235	165	155	155	155	155	100
1910	1	F	40	120	50	40	40	40	40	100
1910	1	M	160	240	170	160	160	160	160	100
1910	1	F	35	115	45	35	35	35	35	100
1910	1	M	165	245	175	165	165	165	165	100
1910	1	F	30	110	40	30	30	30	30	100
1910	1	M	170	250	180	170	170	170	170	100
1910	1	F	25	105	35	25	25	25	25	100
1910	1	M	175	255	185	175	175	175	175	100
1910	1	F	20	100	30	20	20	20	20	100
1910	1	M	180	260	190	180	180	180	180	100
1910	1	F	15	95	25	15	15	15	15	100
1910	1	M	185	265	195	185	185	185	185	100
1910	1	F	10	90	20	10	10	10	10	100
1910	1	M	190	270	200	190	190	190	190	100
1910	1	F	5	85	15	5	5	5	5	100
1910	1	M	195	275	205	195	195	195	195	100
1910	1	F	0	80	10	0	0	0	0	100
1910	1	M	200	280	210	200	200	200	200	100
1910	1	F	-5	75	5	-5	-5	-5	-5	100
1910	1	M	205	285	215	205	205	205	205	100
1910	1	F	-10	70	0	-10	-10	-10	-10	100
1910	1	M	210	290	220	210	210	210	210	100
1910	1	F	-15	65	-5	-15	-15	-15	-15	100
1910	1	M	215	295	225	215	215	215	215	100
1910	1	F	-20	60	-10	-20	-20	-20	-20	100
1910	1	M	220	300	230	220	220	220	220	100
1910	1	F	-25	55	-15	-25	-25	-25	-25	100
1910	1	M	225	305	235	225	225	225	225	100
1910	1	F	-30	50	-20	-30	-30	-30	-30	100
1910	1	M	230	310	240	230	230	230	230	100
1910	1	F	-35	45	-25	-35	-35	-35	-35	100
1910	1	M	235	315	245	235	235	235	235	100
1910	1	F	-40	40	-30	-40	-40	-40	-40	100
1910	1	M	240	320	250	240	240	240	240	100
1910	1	F	-45	35	-35	-45	-45	-45	-45	100
1910	1	M	245	325	255	245	245	245	245	100
1910	1	F	-50	30	-40	-50	-50	-50	-50	100
1910	1	M	250	330	260	250	250	250	250	100
1910	1	F	-55	25	-45	-55	-55	-55	-55	100
1910	1	M	255	335	265	255	255	255	255	100
1910	1	F	-60	20	-50	-60	-60	-60	-60	100
1910	1	M	260	340	270	260	260	260	260	100
1910	1	F	-65	15	-55	-65	-65	-65	-65	100
1910	1	M	265	345	275	265	265	265	265	100
1910	1	F	-70	10	-60	-70	-70	-70	-70	100
1910	1	M	270	350	280	270	270	270	270	100
1910	1	F	-75	5	-65	-75	-75	-75	-75	100
1910	1	M	275	355	285	275	275	275	275	100
1910	1	F	-80	0	-70	-80	-80	-80	-80	100
1910	1	M	280	360	290	280	280	280	280	100
1910	1	F	-85	-5	-75	-85	-85	-85	-85	100
1910	1	M	285	365	295	285	285	285	285	100
1910	1	F	-90	-10	-80	-90	-90	-90	-90	100
1910	1	M	290	370	300	290	290	290	290	100
1910	1	F	-95	-15	-85	-95	-95	-95	-95	100
1910	1	M	295	375	305	295	295	295	295	100
1910	1	F	-100	-20	-90	-100	-100	-100	-100	100
1910	1	M	300	380	310	300	300	300	300	100
1910	1	F	-105	-25	-95	-105	-105	-105	-105	100
1910	1	M	305	385	315	305	305	305	305	100
1910	1	F	-110	-30	-100	-110	-110	-110	-110	100
1910	1	M	310	390	320	310	310	310	310	100
1910	1	F	-115	-35	-105	-115	-115	-115	-115	100
1910	1	M	315	395	325	315	315	315	315	100
1910	1	F	-120	-40	-110	-120	-120	-120	-120	100
1910	1	M	320	400	330	320	320	320	320	100
1910	1	F	-125	-45	-115	-125	-125	-125	-125	100
1910	1	M	325	405	335	325	325	325	325	100
1910	1	F	-130	-50	-120	-130	-130	-130	-130	100
1910	1	M	330	410	340	330	330	330	330	100
1910	1	F	-135	-55	-125	-135	-135	-135	-135	100
1910	1	M	335	415	345	335	335	335	335	100
1910	1	F	-140	-60	-130	-140	-140	-140	-140	100
1910	1	M	340	420	350	340	340	340	340	100
1910	1	F	-145	-65	-135	-145	-145	-145	-145	100
1910	1	M	345	425	355	345	345	345	345	100
1910	1	F	-150	-70	-140	-150	-150	-150	-150	100
1910	1	M	350	430	360	350	350	350	350	100
1910	1	F	-155	-75	-145	-155	-155	-155	-155	100
1910	1	M	355	435	365	355	355	355	355	100
1910	1	F	-160	-80	-150	-160	-160	-160	-160	100
1910	1	M	360	440	370	360	360	360	360	100
1910	1	F	-165	-85	-155	-165	-165	-165	-165	100
1910	1	M	365	445	375	365	365	365	365	100
1910	1	F	-170	-90	-160	-170	-170	-170	-170	100
1910	1	M	370	450	380	370	370	370	370	100
1910	1	F	-175	-95	-165	-175	-175	-175	-175	100
1910	1	M	375	455	385	375	375	375	375	100
1910	1	F	-180	-100	-170	-180	-180	-180	-180	100
1910	1	M	380	460	390	380	380	380	380	100
1910	1	F	-185	-105	-175	-185	-185	-185	-185	100
1910	1	M	385	465	395	385	385	385	385	100
1910	1	F	-190	-110	-180	-190	-190	-190	-190	100
1910	1	M	390	470	400	390	390	390	390	100
1910	1	F	-195	-115	-185	-195	-195	-195	-195	100
1910	1	M	395	475	405	395	395	395	395	100
1910	1	F	-200	-120	-190	-200	-200	-200	-200	100
1910	1	M	400	480	410	400	400	400	400	100
1910	1	F	-205	-125	-195	-205	-205	-205	-205	100
1910	1	M	405	485	415	405	405	405	405	100
1910	1	F	-210	-130	-200	-210	-210	-210	-210	100
1910	1	M	410	490	420	410	410	410	410	100
1910	1	F	-215	-135	-205	-215	-215	-215	-215	100
1910	1	M	415	495	425	415	415	415	415	100
1910	1	F	-220	-140	-210	-220	-220	-220	-220	100
1910	1	M	420	500	430	420	420	420	420	100
1910	1	F	-225	-145	-215	-225	-225	-225	-225	100
1910	1	M	425	505	435	425	425	425	425	100
1910	1	F	-230	-150	-220	-230	-230	-230	-230	100
1910	1	M	430	510	440	430	430	430	430	100
1910	1	F	-235	-155	-225	-235	-235	-235	-235	100
1910	1	M	435	515	445	435	435	435	435	100
1910	1	F	-240	-160	-230	-240	-240	-240	-240	100
1910	1	M	440	520	450	440	440	440	440	100
1910	1	F	-245	-165	-235	-245	-245	-245	-245	100
1910	1	M	445	525	455	445	445	445	445	100
1910	1	F	-250	-170	-240	-250	-250	-250	-250	100
1910	1	M	450	530	460	450	450	450	4	



	Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016	3017	3018	3019	3020	3021	3022	3023	3024	3025	3026	3027	3028	3029	3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3054	3055	3056	3057	3058	3059	3060	3061	3062	3063	3064	3065	3066	3067	3068	3069	3070	3071	3072	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277	3278	3279	3280	3281	3282	3283	3284	3285	3286	3287	3288	3289	3290	3291	3292	3293	3294	3295	3296	3297	3298	3299	3300	3301	3302	3303	3304	3305	3306	3307	3308	3309	3310	3311	3312	3313	3314	3315	3316	3317	3318	3319	3320	3321	3322	3323	3324	3325	3326	3327	3328	3329	3330	3331	3332	3333	3334	3335	3336	3337	3338	3339	3340	3341	3342	3343	3344	3345	3346	3347	3348	3349	3350	3351	3352	3353	33
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Year	Age	Height	Weight	Body Fat %	Lean Body Mass (kg)	Basal Metabolic Rate (kcal/day)	Total Daily Energy Expenditure (kcal/day)	Protein (g/day)	Carbohydrate (g/day)	Fat (g/day)	Calories from Protein	Calories from Carbohydrate	Calories from Fat	Calories from Alcohol	Calories from Other	Calories from Total	Calories from Protein	Calories from Carbohydrate	Calories from Fat	Calories from Alcohol	Calories from Other	Calories from Total
1990	20	170	70	15	59.5	1500	2500	100	200	50	400	800	400	0	0	1600	400	800	400	0	0	1600
1991	21	175	75	15	63.75	1550	2550	105	210	52.5	420	840	420	0	0	1660	420	840	420	0	0	1660
1992	22	180	80	15	67.5	1600	2600	110	220	55	440	880	440	0	0	1720	440	880	440	0	0	1720
1993	23	185	85	15	71.25	1650	2650	115	230	57.5	460	920	460	0	0	1780	460	920	460	0	0	1780
1994	24	190	90	15	75	1700	2700	120	240	60	480	960	480	0	0	1840	480	960	480	0	0	1840
1995	25	195	95	15	78.75	1750	2750	125	250	62.5	500	1000	500	0	0	1900	500	1000	500	0	0	1900
1996	26	200	100	15	82.5	1800	2800	130	260	65	520	1040	520	0	0	1960	520	1040	520	0	0	1960
1997	27	205	105	15	86.25	1850	2850	135	270	67.5	540	1080	540	0	0	2020	540	1080	540	0	0	2020
1998	28	210	110	15	90	1900	2900	140	280	70	560	1120	560	0	0	2080	560	1120	560	0	0	2080
1999	29	215	115	15	93.75	1950	2950	145	290	72.5	580	1160	580	0	0	2140	580	1160	580	0	0	2140
2000	30	220	120	15	97.5	2000	3000	150	300	75	600	1200	600	0	0	2200	600	1200	600	0	0	2200
2001	31	225	125	15	101.25	2050	3050	155	310	77.5	620	1240	620	0	0	2260	620	1240	620	0	0	2260
2002	32	230	130	15	105	2100	3100	160	320	80	640	1280	640	0	0	2320	640	1280	640	0	0	2320
2003	33	235	135	15	108.75	2150	3150	165	330	82.5	660	1320	660	0	0	2380	660	1320	660	0	0	2380
2004	34	240	140	15	112.5	2200	3200	170	340	85	680	1360	680	0	0	2440	680	1360	680	0	0	2440
2005	35	245	145	15	116.25	2250	3250	175	350	87.5	700	1400	700	0	0	2500	700	1400	700	0	0	2500
2006	36	250	150	15	120	2300	3300	180	360	90	720	1440	720	0	0	2560	720	1440	720	0	0	2560
2007	37	255	155	15	123.75	2350	3350	185	370	92.5	740	1480	740	0	0	2620	740	1480	740	0	0	2620
2008	38	260	160	15	127.5	2400	3400	190	380	95	760	1520	760	0	0	2680	760	1520	760	0	0	2680
2009	39	265	165	15	131.25	2450	3450	195	390	97.5	780	1560	780	0	0	2740	780	1560	780	0	0	2740
2010	40	270	170	15	135	2500	3500	200	400	100	800	1600	800	0	0	2800	800	1600	800	0	0	2800



Year	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Number of Days
1901	1	2	3	4	5	6	7	8	9	10	30
1902	1	2	3	4	5	6	7	8	9	10	30
1903	1	2	3	4	5	6	7	8	9	10	30
1904	1	2	3	4	5	6	7	8	9	10	30
1905	1	2	3	4	5	6	7	8	9	10	30
1906	1	2	3	4	5	6	7	8	9	10	30
1907	1	2	3	4	5	6	7	8	9	10	30
1908	1	2	3	4	5	6	7	8	9	10	30
1909	1	2	3	4	5	6	7	8	9	10	30
1910	1	2	3	4	5	6	7	8	9	10	30
1911	1	2	3	4	5	6	7	8	9	10	30
1912	1	2	3	4	5	6	7	8	9	10	30
1913	1	2	3	4	5	6	7	8	9	10	30
1914	1	2	3	4	5	6	7	8	9	10	30
1915	1	2	3	4	5	6	7	8	9	10	30
1916	1	2	3	4	5	6	7	8	9	10	30
1917	1	2	3	4	5	6	7	8	9	10	30
1918	1	2	3	4	5	6	7	8	9	10	30
1919	1	2	3	4	5	6	7	8	9	10	30
1920	1	2	3	4	5	6	7	8	9	10	30
1921	1	2	3	4	5	6	7	8	9	10	30
1922	1	2	3	4	5	6	7	8	9	10	30
1923	1	2	3	4	5	6	7	8	9	10	30
1924	1	2	3	4	5	6	7	8	9	10	30
1925	1	2	3	4	5	6	7	8	9	10	30
1926	1	2	3	4	5	6	7	8	9	10	30
1927	1	2	3	4	5	6	7	8	9	10	30
1928	1	2	3	4	5	6	7	8	9	10	30
1929	1	2	3	4	5	6	7	8	9	10	30
1930	1	2	3	4	5	6	7	8	9	10	30
1931	1	2	3	4	5	6	7	8	9	10	30
1932	1	2	3	4	5	6	7	8	9	10	30
1933	1	2	3	4	5	6	7	8	9	10	30
1934	1	2	3	4	5	6	7	8	9	10	30
1935	1	2	3	4	5	6	7	8	9	10	30
1936	1	2	3	4	5	6	7	8	9	10	30
1937	1	2	3	4	5	6	7	8	9	10	30
1938	1	2	3	4	5	6	7	8	9	10	30
1939	1	2	3	4	5	6	7	8	9	10	30
1940	1	2	3	4	5	6	7	8	9	10	30
1941	1	2	3	4	5	6	7	8	9	10	30
1942	1	2	3	4	5	6	7	8	9	10	30
1943	1	2	3	4	5	6	7	8	9	10	30
1944	1	2	3	4	5	6	7	8	9	10	30
1945	1	2	3	4	5	6	7	8	9	10	30
1946	1	2	3	4	5	6	7	8	9	10	30
1947	1	2	3	4	5	6	7	8	9	10	30
1948	1	2	3	4	5	6	7	8	9	10	30
1949	1	2	3	4	5	6	7	8	9	10	30

[illegible]

















[illegible]

[illegible]



APPENDIX B  
ASSIGNMENT TWO TEST  
COMPARISON WITH  
ASSIGNMENT TWO TEST

Key:

A, B, C, D = Test cells in a 2 x 2 contingency table

Arrows to be followed by "L" = 1 of outcome (Live score)

Arrows to be followed by "M" = 1 of outcome (Miles score)

$\chi^2$  = the chi-square test statistic (where the critical  
value in the 100 level when  $df = 1$  is 3.84)

Fisher = the Fisher exact probability

Yates = the exact probability with the Yates modification

----- = not applicable





[illegible]



[illegible]





[illegible]

Project	Year	Area	Volume	Weight	Material	Notes	Remarks
1	1950	100	100	100	100	100	100
2	1951	100	100	100	100	100	100
3	1952	100	100	100	100	100	100
4	1953	100	100	100	100	100	100
5	1954	100	100	100	100	100	100
6	1955	100	100	100	100	100	100
7	1956	100	100	100	100	100	100
8	1957	100	100	100	100	100	100
9	1958	100	100	100	100	100	100
10	1959	100	100	100	100	100	100
11	1960	100	100	100	100	100	100
12	1961	100	100	100	100	100	100
13	1962	100	100	100	100	100	100
14	1963	100	100	100	100	100	100
15	1964	100	100	100	100	100	100
16	1965	100	100	100	100	100	100
17	1966	100	100	100	100	100	100
18	1967	100	100	100	100	100	100
19	1968	100	100	100	100	100	100
20	1969	100	100	100	100	100	100
21	1970	100	100	100	100	100	100
22	1971	100	100	100	100	100	100
23	1972	100	100	100	100	100	100
24	1973	100	100	100	100	100	100
25	1974	100	100	100	100	100	100
26	1975	100	100	100	100	100	100
27	1976	100	100	100	100	100	100
28	1977	100	100	100	100	100	100
29	1978	100	100	100	100	100	100
30	1979	100	100	100	100	100	100
31	1980	100	100	100	100	100	100
32	1981	100	100	100	100	100	100
33	1982	100	100	100	100	100	100
34	1983	100	100	100	100	100	100
35	1984	100	100	100	100	100	100
36	1985	100	100	100	100	100	100
37	1986	100	100	100	100	100	100
38	1987	100	100	100	100	100	100
39	1988	100	100	100	100	100	100
40	1989	100	100	100	100	100	100
41	1990	100	100	100	100	100	100
42	1991	100	100	100	100	100	100
43	1992	100	100	100	100	100	100
44	1993	100	100	100	100	100	100
45	1994	100	100	100	100	100	100
46	1995	100	100	100	100	100	100
47	1996	100	100	100	100	100	100
48	1997	100	100	100	100	100	100
49	1998	100	100	100	100	100	100
50	1999	100	100	100	100	100	100
51	2000	100	100	100	100	100	100
52	2001	100	100	100	100	100	100
53	2002	100	100	100	100	100	100
54	2003	100	100	100	100	100	100
55	2004	100	100	100	100	100	100
56	2005	100	100	100	100	100	100
57	2006	100	100	100	100	100	100
58	2007	100	100	100	100	100	100
59	2008	100	100	100	100	100	100
60	2009	100	100	100	100	100	100
61	2010	100	100	100	100	100	100
62	2011	100	100	100	100	100	100
63	2012	100	100	100	100	100	100
64	2013	100	100	100	100	100	100
65	2014	100	100	100	100	100	100
66	2015	100	100	100	100	100	100
67	2016	100	100	100	100	100	100
68	2017	100	100	100	100	100	100
69	2018	100	100	100	100	100	100
70	2019	100	100	100	100	100	100
71	2020	100	100	100	100	100	100
72	2021	100	100	100	100	100	100
73	2022	100	100	100	100	100	100
74	2023	100	100	100	100	100	100
75	2024	100	100	100	100	100	100
76	2025	100	100	100	100	100	100
77	2026	100	100	100	100	100	100
78	2027	100	100	100	100	100	100
79	2028	100	100	100	100	100	100
80	2029	100	100	100	100	100	100
81	2030	100	100	100	100	100	100
82	2031	100	100	100	100	100	100
83	2032	100	100	100	100	100	100
84	2033	100	100	100	100	100	100
85	2034	100	100	100	100	100	100
86	2035	100	100	100	100	100	100
87	2036	100	100	100	100	100	100
88	2037	100	100	100	100	100	100
89	2038	100	100	100	100	100	100
90	2039	100	100	100	100	100	100
91	2040	100	100	100	100	100	100
92	2041	100	100	100	100	100	100
93	2042	100	100	100	100	100	100
94	2043	100	100	100	100	100	100
95	2044	100	100	100	100	100	100
96	2045	100	100	100	100	100	100
97	2046	100	100	100	100	100	100
98	2047	100	100	100	100	100	100
99	2048	100	100	100	100	100	100
100	2049	100	100	100	100	100	100











[illegible]





[illegible]

Year	Age	Gender	Height	Weight	Test Score	Random Number	Significant Digit
1990	18	Male	1.75	75	85	0.1234	1
1991	19	Female	1.65	65	75	0.2345	2
1992	20	Male	1.80	80	90	0.3456	3
1993	21	Female	1.70	70	80	0.4567	4
1994	22	Male	1.85	85	95	0.5678	5
1995	23	Female	1.75	75	85	0.6789	6
1996	24	Male	1.90	90	100	0.7890	7
1997	25	Female	1.80	80	90	0.8901	8
1998	26	Male	1.95	95	105	0.9012	9
1999	27	Female	1.85	85	95	0.0123	0
2000	28	Male	2.00	100	110	0.1234	1
2001	29	Female	1.90	90	100	0.2345	2
2002	30	Male	2.05	105	115	0.3456	3
2003	31	Female	1.95	95	105	0.4567	4
2004	32	Male	2.10	110	120	0.5678	5
2005	33	Female	2.00	100	110	0.6789	6
2006	34	Male	2.15	115	125	0.7890	7
2007	35	Female	2.05	105	115	0.8901	8
2008	36	Male	2.20	120	130	0.9012	9
2009	37	Female	2.10	110	120	0.0123	0
2010	38	Male	2.25	125	135	0.1234	1
2011	39	Female	2.15	115	125	0.2345	2
2012	40	Male	2.30	130	140	0.3456	3
2013	41	Female	2.20	120	130	0.4567	4
2014	42	Male	2.35	135	145	0.5678	5
2015	43	Female	2.25	125	135	0.6789	6
2016	44	Male	2.40	140	150	0.7890	7
2017	45	Female	2.30	130	140	0.8901	8
2018	46	Male	2.45	145	155	0.9012	9
2019	47	Female	2.35	135	145	0.0123	0
2020	48	Male	2.50	150	160	0.1234	1
2021	49	Female	2.40	140	150	0.2345	2
2022	50	Male	2.55	155	165	0.3456	3
2023	51	Female	2.45	145	155	0.4567	4
2024	52	Male	2.60	160	170	0.5678	5
2025	53	Female	2.50	150	160	0.6789	6
2026	54	Male	2.65	165	175	0.7890	7
2027	55	Female	2.55	155	165	0.8901	8
2028	56	Male	2.70	170	180	0.9012	9
2029	57	Female	2.60	160	170	0.0123	0
2030	58	Male	2.75	175	185	0.1234	1
2031	59	Female	2.65	165	175	0.2345	2
2032	60	Male	2.80	180	190	0.3456	3
2033	61	Female	2.70	170	180	0.4567	4
2034	62	Male	2.85	185	195	0.5678	5
2035	63	Female	2.75	175	185	0.6789	6
2036	64	Male	2.90	190	200	0.7890	7
2037	65	Female	2.80	180	190	0.8901	8
2038	66	Male	2.95	195	205	0.9012	9
2039	67	Female	2.85	185	195	0.0123	0
2040	68	Male	3.00	200	210	0.1234	1
2041	69	Female	2.90	190	200	0.2345	2
2042	70	Male	3.05	205	215	0.3456	3
2043	71	Female	2.95	195	205	0.4567	4
2044	72	Male	3.10	210	220	0.5678	5
2045	73	Female	3.00	200	210	0.6789	6
2046	74	Male	3.15	215	225	0.7890	7
2047	75	Female	3.05	205	215	0.8901	8
2048	76	Male	3.20</				



No.	Date	Hour	Fishes	Fishes taken	Fishes killed	Significance in this or later
1	1881	1	1	1	1	1
2	1881	1	1	1	1	2
3	1881	1	1	1	1	3
4	1881	1	1	1	1	4
5	1881	1	1	1	1	5
6	1881	1	1	1	1	6
7	1881	1	1	1	1	7
8	1881	1	1	1	1	8
9	1881	1	1	1	1	9
10	1881	1	1	1	1	10
11	1881	1	1	1	1	11
12	1881	1	1	1	1	12
13	1881	1	1	1	1	13
14	1881	1	1	1	1	14
15	1881	1	1	1	1	15
16	1881	1	1	1	1	16
17	1881	1	1	1	1	17
18	1881	1	1	1	1	18
19	1881	1	1	1	1	19
20	1881	1	1	1	1	20
21	1881	1	1	1	1	21
22	1881	1	1	1	1	22
23	1881	1	1	1	1	23
24	1881	1	1	1	1	24
25	1881	1	1	1	1	25
26	1881	1	1	1	1	26
27	1881	1	1	1	1	27
28	1881	1	1	1	1	28
29	1881	1	1	1	1	29
30	1881	1	1	1	1	30
31	1881	1	1	1	1	31
32	1881	1	1	1	1	32
33	1881	1	1	1	1	33
34	1881	1	1	1	1	34
35	1881	1	1	1	1	35
36	1881	1	1	1	1	36
37	1881	1	1	1	1	37
38	1881	1	1	1	1	38
39	1881	1	1	1	1	39
40	1881	1	1	1	1	40
41	1881	1	1	1	1	41
42	1881	1	1	1	1	42
43	1881	1	1	1	1	43
44	1881	1	1	1	1	44
45	1881	1	1	1	1	45
46	1881	1	1	1	1	46
47	1881	1	1	1	1	47
48	1881	1	1	1	1	48
49	1881	1	1	1	1	49
50	1881	1	1	1	1	50
51	1881	1	1	1	1	51
52	1881	1	1	1	1	52
53	1881	1	1	1	1	53
54	1881	1	1	1	1	54
55	1881	1	1	1	1	55
56	1881	1	1	1	1	56
57	1881	1	1	1	1	57
58	1881	1	1	1	1	58
59	1881	1	1	1	1	59
60	1881	1	1	1	1	60
61	1881	1	1	1	1	61
62	1881	1	1	1	1	62
63	1881	1	1	1	1	63
64	1881	1	1	1	1	64
65	1881	1	1	1	1	65
66	1881	1	1	1	1	66
67	1881	1	1	1	1	67
68	1881	1	1	1	1	68
69	1881	1	1	1	1	69
70	1881	1	1	1	1	70
71	1881	1	1	1	1	71
72	1881	1	1	1	1	72
73	1881	1	1	1	1	73
74	1881	1	1	1	1	74
75	1881	1	1	1	1	75
76	1881	1	1	1	1	76
77	1881	1	1	1	1	77
78	1881	1	1	1	1	78
79	1881	1	1	1	1	79
80	1881	1	1	1	1	80
81	1881	1	1	1	1	81
82	1881	1	1	1	1	82
83	1881	1	1	1	1	83
84	1881	1	1	1	1	84
85	1881	1	1	1	1	85
86	1881	1	1	1	1	86
87	1881	1	1	1	1	87
88	1881	1	1	1	1	88
89	1881	1	1	1	1	89
90	1881	1	1	1	1	90
91	1881	1	1	1	1	91
92	1881	1	1	1	1	92
93	1881	1	1	1	1	93
94	1881	1	1	1	1	94
95	1881	1	1	1	1	95
96	1881	1	1	1	1	96
97	1881	1	1	1	1	97
98	1881	1	1	1	1	98
99	1881	1	1	1	1	99
100	1881	1	1	1	1	100



Time min	Temp °C	Temp °F	Exp in	Exp out	Factor	Factor	Factor Ratio	Location Number	Approximate % of Total
15	100	212	10	10	0.0000	0.0000	---	---	0
20	100	212	10	10	0.0000	0.0000	---	---	0
25	100	212	10	10	0.0000	0.0000	---	---	0
30	100	212	10	10	0.0000	0.0000	---	---	0
35	100	212	10	10	0.0000	0.0000	---	---	0
40	100	212	10	10	0.0000	0.0000	---	---	0
45	100	212	10	10	0.0000	0.0000	---	---	0
50	100	212	10	10	0.0000	0.0000	---	---	0
55	100	212	10	10	0.0000	0.0000	---	---	0
60	100	212	10	10	0.0000	0.0000	---	---	0
65	100	212	10	10	0.0000	0.0000	---	---	0
70	100	212	10	10	0.0000	0.0000	---	---	0
75	100	212	10	10	0.0000	0.0000	---	---	0
80	100	212	10	10	0.0000	0.0000	---	---	0
85	100	212	10	10	0.0000	0.0000	---	---	0
90	100	212	10	10	0.0000	0.0000	---	---	0
95	100	212	10	10	0.0000	0.0000	---	---	0
100	100	212	10	10	0.0000	0.0000	---	---	0
105	100	212	10	10	0.0000	0.0000	---	---	0
110	100	212	10	10	0.0000	0.0000	---	---	0
115	100	212	10	10	0.0000	0.0000	---	---	0
120	100	212	10	10	0.0000	0.0000	---	---	0
125	100	212	10	10	0.0000	0.0000	---	---	0
130	100	212	10	10	0.0000	0.0000	---	---	0
135	100	212	10	10	0.0000	0.0000	---	---	0
140	100	212	10	10	0.0000	0.0000	---	---	0
145	100	212	10	10	0.0000	0.0000	---	---	0
150	100	212	10	10	0.0000	0.0000	---	---	0
155	100	212	10	10	0.0000	0.0000	---	---	0
160	100	212	10	10	0.0000	0.0000	---	---	0
165	100	212	10	10	0.0000	0.0000	---	---	0
170	100	212	10	10	0.0000	0.0000	---	---	0
175	100	212	10	10	0.0000	0.0000	---	---	0
180	100	212	10	10	0.0000	0.0000	---	---	0
185	100	212	10	10	0.0000	0.0000	---	---	0
190	100	212	10	10	0.0000	0.0000	---	---	0
195	100	212	10	10	0.0000	0.0000	---	---	0
200	100	212	10	10	0.0000	0.0000	---	---	0
205	100	212	10	10	0.0000	0.0000	---	---	0
210	100	212	10	10	0.0000	0.0000	---	---	0
215	100	212	10	10	0.0000	0.0000	---	---	0
220	100	212	10	10	0.0000	0.0000	---	---	0
225	100	212	10	10	0.0000	0.0000	---	---	0
230	100	212	10	10	0.0000	0.0000	---	---	0
235	100	212	10	10	0.0000	0.0000	---	---	0
240	100	212	10	10	0.0000	0.0000	---	---	0
245	100	212	10	10	0.0000	0.0000	---	---	0
250	100	212	10	10	0.0000	0.0000	---	---	0
255	100	212	10	10	0.0000	0.0000	---	---	0
260	100	212	10	10	0.0000	0.0000	---	---	0
265	100	212	10	10	0.0000	0.0000	---	---	0
270	100	212	10	10	0.0000	0.0000	---	---	0
275	100	212	10	10	0.0000	0.0000	---	---	0
280	100	212	10	10	0.0000	0.0000	---	---	0
285	100	212	10	10	0.0000	0.0000	---	---	0
290	100	212	10	10	0.0000	0.0000	---	---	0
295	100	212	10	10	0.0000	0.0000	---	---	0
300	100	212	10	10	0.0000	0.0000	---	---	0

After the reaction under various conditions, the authors, Baker and Richard J. Barnes, reported  
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APPENDIX B  
 AVERAGE TRAIL LANE  
 COMPARED WITH  
 AVERAGE TRAIL YIELD

Key

A, B, C, D = four cells in a 2 x 2 matchingway table

Asking is followed by "L" = 4 of upstream (lane lane)

Asking is followed by "Y" = 4 of upstream (lane lane)

$\chi^2$  = the chi-square test statistic (where the critical value at the .05 level when  $df = 1$  is 3.84)

Fisher = the Fisher exact probability

Yocher = the exact probability with the Yocher Modification

----- = not applicable



Year	Enrollment	Faculty	Students	Faculty	Teacher-Student Ratio	Academic Ranking	Significant in History
1900	100	10	1000	10	100:10	1000	Yes
1905	150	15	1500	15	150:15	1500	Yes
1910	200	20	2000	20	200:20	2000	Yes
1915	250	25	2500	25	250:25	2500	Yes
1920	300	30	3000	30	300:30	3000	Yes
1925	350	35	3500	35	350:35	3500	Yes
1930	400	40	4000	40	400:40	4000	Yes
1935	450	45	4500	45	450:45	4500	Yes
1940	500	50	5000	50	500:50	5000	Yes
1945	550	55	5500	55	550:55	5500	Yes
1950	600	60	6000	60	600:60	6000	Yes
1955	650	65	6500	65	650:65	6500	Yes
1960	700	70	7000	70	700:70	7000	Yes
1965	750	75	7500	75	750:75	7500	Yes
1970	800	80	8000	80	800:80	8000	Yes
1975	850	85	8500	85	850:85	8500	Yes
1980	900	90	9000	90	900:90	9000	Yes
1985	950	95	9500	95	950:95	9500	Yes
1990	1000	100	10000	100	1000:100	10000	Yes
1995	1050	105	10500	105	1050:105	10500	Yes
2000	1100	110	11000	110	1100:110	11000	Yes
2005	1150	115	11500	115	1150:115	11500	Yes
2010	1200	120	12000	120	1200:120	12000	Yes
2015	1250	125	12500	125	1250:125	12500	Yes
2020	1300	130	13000	130	1300:130	13000	Yes



[illegible]

Case	Age	Sex	Height	Weight	Teacher	Division	Significant at 5% or better
1	12	M	52	110	1	1	0.0000
2	12	M	52	110	1	1	0.0000
3	12	M	52	110	1	1	0.0000
4	12	M	52	110	1	1	0.0000
5	12	M	52	110	1	1	0.0000
6	12	M	52	110	1	1	0.0000
7	12	M	52	110	1	1	0.0000
8	12	M	52	110	1	1	0.0000
9	12	M	52	110	1	1	0.0000
10	12	M	52	110	1	1	0.0000
11	12	M	52	110	1	1	0.0000
12	12	M	52	110	1	1	0.0000
13	12	M	52	110	1	1	0.0000
14	12	M	52	110	1	1	0.0000
15	12	M	52	110	1	1	0.0000
16	12	M	52	110	1	1	0.0000
17	12	M	52	110	1	1	0.0000
18	12	M	52	110	1	1	0.0000
19	12	M	52	110	1	1	0.0000
20	12	M	52	110	1	1	0.0000
21	12	M	52	110	1	1	0.0000
22	12	M	52	110	1	1	0.0000
23	12	M	52	110	1	1	0.0000
24	12	M	52	110	1	1	0.0000
25	12	M	52	110	1	1	0.0000
26	12	M	52	110	1	1	0.0000
27	12	M	52	110	1	1	0.0000
28	12	M	52	110	1	1	0.0000
29	12	M	52	110	1	1	0.0000
30	12	M	52	110	1	1	0.0000
31	12	M	52	110	1	1	0.0000
32	12	M	52	110	1	1	0.0000
33	12	M	52	110	1	1	0.0000
34	12	M	52	110	1	1	0.0000
35	12	M	52	110	1	1	0.0000
36	12	M	52	110	1	1	0.0000
37	12	M	52	110	1	1	0.0000
38	12	M	52	110	1	1	0.0000
39	12	M	52	110	1	1	0.0000
40	12	M	52	110	1	1	0.0000
41	12	M	52	110	1	1	0.0000
42	12	M	52	110	1	1	0.0000
43	12	M	52	110	1	1	0.0000
44	12	M	52	110	1	1	0.0000
45	12	M	52	110	1	1	0.0000
46	12	M	52	110	1	1	0.0000
47	12	M	52	110	1	1	0.0000
48	12	M	52	110	1	1	0.0000
49	12	M	52	110	1	1	0.0000
50	12	M	52	110	1	1	0.0000
51	12	M	52	110	1	1	0.0000
52	12	M	52	110	1	1	0.0000
53	12	M	52	110	1	1	0.0000
54	12	M	52	110	1	1	0.0000
55	12	M	52	110	1	1	0.0000
56	12	M	52	110	1	1	0.0000
57	12	M	52	110	1	1	0.0000
58	12	M	52	110	1	1	0.0000
59	12	M	52	110	1	1	0.0000
60	12	M	52	110	1	1	0.0000
61	12	M	52	110	1	1	0.0000
62	12	M	52	110	1	1	0.0000
63	12	M	52	110	1	1	0.0000
64	12	M	52	110	1	1	0.0000
65	12	M	52	110	1	1	0.0000
66	12	M	52	110	1	1	0.0000
67	12	M	52	110	1	1	0.0000
68	12	M	52	110	1	1	0.0000
69	12	M	52	110	1	1	0.0000
70	12	M	52	110	1	1	0.0000
71	12	M	52	110	1	1	0.0000
72	12	M	52	110	1	1	0.0000
73	12	M	52	110	1	1	0.0000
74	12	M	52	110	1	1	0.0000
75	12	M	52	110	1	1	0.0000
76	12	M	52	110	1	1	0.0000
77	12	M	52	110	1	1	0.0000
78	12	M	52	110	1	1	0.0000
79	12	M	52	110	1	1	0.0000
80	12	M	52	110	1	1	0.0000
81	12	M	52	110	1	1	0.0000
82	12	M	52	110	1	1	0.0000
83	12	M	52	110	1	1	0.0000
84	12	M	52	110	1	1	0.0000
85	12	M	52	110	1	1	0.0000
86	12	M	52	110	1	1	0.0000
87	12	M	52	110	1	1	0.0000
88	12	M	52	110	1	1	0.0000
89	12	M	52	110	1	1	0.0000
90	12	M	52	110	1	1	0.0000
91	12	M	52	110	1	1	0.0000
92	12	M	52	110	1	1	0.0000
93	12	M	52	110	1	1	0.0000
94	12	M	52	110	1	1	0.0000
95	12	M	52	110	1	1	0.0000
96	12	M	52	110	1	1	0.0000
97	12	M	52	110	1	1	0.0000
98	12	M	52	110	1	1	0.0000
99	12	M	52	110	1	1	0.0000
100	12	M	52	110	1	1	0.0000





Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

[illegible]

[illegible]





[illegible]



[illegible]



Time [sec]	Angle [°]	Angle [°]	Comp [°]	Beam [°]	$\theta$	Radius	Tractor	Radius	Section Number	Significant at 90° or higher
00:00	00:00	00:00	00:00	00:00	0.000	0.000	0.000	0.000	00000	00
00:01	00:01	00:01	00:01	00:01	0.001	0.001	0.001	0.001	00001	00
00:02	00:02	00:02	00:02	00:02	0.002	0.002	0.002	0.002	00002	00
00:03	00:03	00:03	00:03	00:03	0.003	0.003	0.003	0.003	00003	00
00:04	00:04	00:04	00:04	00:04	0.004	0.004	0.004	0.004	00004	00
00:05	00:05	00:05	00:05	00:05	0.005	0.005	0.005	0.005	00005	00
00:06	00:06	00:06	00:06	00:06	0.006	0.006	0.006	0.006	00006	00
00:07	00:07	00:07	00:07	00:07	0.007	0.007	0.007	0.007	00007	00
00:08	00:08	00:08	00:08	00:08	0.008	0.008	0.008	0.008	00008	00
00:09	00:09	00:09	00:09	00:09	0.009	0.009	0.009	0.009	00009	00
00:10	00:10	00:10	00:10	00:10	0.010	0.010	0.010	0.010	00010	00
00:11	00:11	00:11	00:11	00:11	0.011	0.011	0.011	0.011	00011	00
00:12	00:12	00:12	00:12	00:12	0.012	0.012	0.012	0.012	00012	00
00:13	00:13	00:13	00:13	00:13	0.013	0.013	0.013	0.013	00013	00
00:14	00:14	00:14	00:14	00:14	0.014	0.014	0.014	0.014	00014	00
00:15	00:15	00:15	00:15	00:15	0.015	0.015	0.015	0.015	00015	00
00:16	00:16	00:16	00:16	00:16	0.016	0.016	0.016	0.016	00016	00
00:17	00:17	00:17	00:17	00:17	0.017	0.017	0.017	0.017	00017	00
00:18	00:18	00:18	00:18	00:18	0.018	0.018	0.018	0.018	00018	00
00:19	00:19	00:19	00:19	00:19	0.019	0.019	0.019	0.019	00019	00
00:20	00:20	00:20	00:20	00:20	0.020	0.020	0.020	0.020	00020	00
00:21	00:21	00:21	00:21	00:21	0.021	0.021	0.021	0.021	00021	00
00:22	00:22	00:22	00:22	00:22	0.022	0.022	0.022	0.022	00022	00
00:23	00:23	00:23	00:23	00:23	0.023	0.023	0.023	0.023	00023	00
00:24	00:24	00:24	00:24	00:24	0.024	0.024	0.024	0.024	00024	00
00:25	00:25	00:25	00:25	00:25	0.025	0.025	0.025	0.025	00025	00
00:26	00:26	00:26	00:26	00:26	0.026	0.026	0.026	0.026	00026	00
00:27	00:27	00:27	00:27	00:27	0.027	0.027	0.027	0.027	00027	00
00:28	00:28	00:28	00:28	00:28	0.028	0.028	0.028	0.028	00028	00
00:29	00:29	00:29	00:29	00:29	0.029	0.029	0.029	0.029	00029	00
00:30	00:30	00:30	00:30	00:30	0.030	0.030	0.030	0.030	00030	00
00:31	00:31	00:31	00:31	00:31	0.031	0.031	0.031	0.031	00031	00
00:32	00:32	00:32	00:32	00:32	0.032	0.032	0.032	0.032	00032	00
00:33	00:33	00:33	00:33	00:33	0.033	0.033	0.033	0.033	00033	00
00:34	00:34	00:34	00:34	00:34	0.034	0.034	0.034	0.034	00034	00
00:35	00:35	00:35	00:35	00:35	0.035	0.035	0.035	0.035	00035	00
00:36	00:36	00:36	00:36	00:36	0.036	0.036	0.036	0.036	00036	00
00:37	00:37	00:37	00:37	00:37	0.037	0.037	0.037	0.037	00037	00
00:38	00:38	00:38	00:38	00:38	0.038	0.038	0.038	0.038	00038	00
00:39	00:39	00:39	00:39	00:39	0.039	0.039	0.039	0.039	00039	00
00:40	00:40	00:40	00:40	00:40	0.040	0.040	0.040	0.040	00040	00
00:41	00:41	00:41	00:41	00:41	0.041	0.041	0.041	0.041	00041	00
00:42	00:42	00:42	00:42	00:42	0.042	0.042	0.042	0.042	00042	00
00:43	00:43	00:43	00:43	00:43	0.043	0.043	0.043	0.043	00043	00
00:44	00:44	00:44	00:44	00:44	0.044	0.044	0.044	0.044	00044	00
00:45	00:45	00:45	00:45	00:45	0.045	0.045	0.045	0.045	00045	00
00:46	00:46	00:46	00:46	00:46	0.046	0.046	0.046	0.046	00046	00
00:47	00:47	00:47	00:47	00:47	0.047	0.047	0.047	0.047	00047	00
00:48	00:48	00:48	00:48	00:48	0.048	0.048	0.048	0.048	00048	00
00:49	00:49	00:49	00:49	00:49	0.049	0.049	0.049	0.049	00049	00
00:50	00:50	00:50	00:50	00:50	0.050	0.050	0.050	0.050	00050	00
00:51	00:51	00:51	00:51	00:51	0.051	0.051	0.051	0.051	00051	00
00:52	00:52	00:52	00:52	00:52	0.052	0.052	0.052	0.052	00052	00
00:53	00:53	00:53	00:53	00:53	0.053	0.053	0.053	0.053	00053	00
00:54	00:54	00:54	00:54	00:54	0.054	0.054	0.054	0.054	00054	00
00:55	00:55	00:55	00:55	00:55	0.055	0.055	0.055	0.055	00055	00
00:56	00:56	00:56	00:56	00:56	0.056	0.056	0.056	0.056	00056	00
00:57	00:57	00:57	00:57	00:57	0.057	0.057	0.057	0.057	00057	00
00:58	00:58	00:58	00:58	00:58	0.058	0.058	0.058	0.058	00058	00
00:59	00:59	00:59	00:59	00:59	0.059	0.059	0.059	0.059	00059	00
01:00	01:00	01:00	01:00	01:00	0.060	0.060	0.060	0.060	00060	00

[illegible]





[illegible]

Year	Book	Year	Cost	Year	Year	Year	Year	Year	Year
1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
1900	1901	1902	1903	1904	1905	1906	1907	1908	1909

For the random number tables used, see Andrew Weber and Richard E. Brown, *Random Number Tables* (New York: McGraw-Hill, 1933), pp. 100-101.

# APPENDIX G SURVIVAL TIMES LIFE COMPARED WITH SURVIVAL FROM FIRM

Key:

A, B, C, D = first cells in a 2 x 2 contingency table  
 Probable to follow by "L" = 0 of outcome (Lives saved)  
 Probable to follow by "H" = 0 of outcome (Lives saved)

$\chi^2$  = the chi-square test statistic (where the critical  
 value at the .05 level when df = 1 is 3.84)

Fisher = the Fisher exact probability

Taylor = the exact probability with the Taylor Modification

..... = not applicable





Case	Age	Height	Color	Sex	Weight	Place	Grade	Teacher	Rating	Significant in cell or battery
1	18	5' 10"	1	M	150	1	1	1	1	1
2	19	5' 11"	2	F	140	2	2	2	2	2
3	20	6' 0"	3	M	160	3	3	3	3	3
4	21	6' 1"	4	F	155	4	4	4	4	4
5	22	6' 2"	5	M	165	5	5	5	5	5
6	23	6' 3"	6	F	170	6	6	6	6	6
7	24	6' 4"	7	M	175	7	7	7	7	7
8	25	6' 5"	8	F	180	8	8	8	8	8
9	26	6' 6"	9	M	185	9	9	9	9	9
10	27	6' 7"	10	F	190	10	10	10	10	10
11	28	6' 8"	11	M	195	11	11	11	11	11
12	29	6' 9"	12	F	200	12	12	12	12	12
13	30	6' 10"	13	M	205	13	13	13	13	13
14	31	6' 11"	14	F	210	14	14	14	14	14
15	32	7' 0"	15	M	215	15	15	15	15	15
16	33	7' 1"	16	F	220	16	16	16	16	16
17	34	7' 2"	17	M	225	17	17	17	17	17
18	35	7' 3"	18	F	230	18	18	18	18	18
19	36	7' 4"	19	M	235	19	19	19	19	19
20	37	7' 5"	20	F	240	20	20	20	20	20
21	38	7' 6"	21	M	245	21	21	21	21	21
22	39	7' 7"	22	F	250	22	22	22	22	22
23	40	7' 8"	23	M	255	23	23	23	23	23
24	41	7' 9"	24	F	260	24	24	24	24	24
25	42	7' 10"	25	M	265	25	25	25	25	25
26	43	7' 11"	26	F	270	26	26	26	26	26
27	44	8' 0"	27	M	275	27	27	27	27	27
28	45	8' 1"	28	F	280	28	28	28	28	28
29	46	8' 2"	29	M	285	29	29	29	29	29
30	47	8' 3"	30	F	290	30	30	30	30	30
31	48	8' 4"	31	M	295	31	31	31	31	31
32	49	8' 5"	32	F	300	32	32	32	32	32
33	50	8' 6"	33	M	305	33	33	33	33	33
34	51	8' 7"	34	F	310	34	34	34	34	34
35	52	8' 8"	35	M	315	35	35	35	35	35
36	53	8' 9"	36	F	320	36	36	36	36	36
37	54	8' 10"	37	M	325	37	37	37	37	37
38	55	8' 11"	38	F	330	38	38	38	38	38
39	56	9' 0"	39	M	335	39	39	39	39	39
40	57	9' 1"	40	F	340	40	40	40	40	40
41	58	9' 2"	41	M	345	41	41	41	41	41
42	59	9' 3"	42	F	350	42	42	42	42	42
43	60	9' 4"	43	M	355	43	43	43	43	43
44	61	9' 5"	44	F	360	44	44	44	44	44
45	62	9' 6"	45	M	365	45	45	45	45	45
46	63	9' 7"	46	F	370	46	46	46	46	46
47	64	9' 8"	47	M	375	47	47	47	47	47
48	65	9' 9"	48	F	380	48	48	48	48	48
49	66	9' 10"	49	M	385	49	49	49	49	49
50	67	9' 11"	50	F	390	50	50	50	50	50
51	68	10' 0"	51	M	395	51	51	51	51	51
52	69	10' 1"	52	F	400	52	52	52	52	52
53	70	10' 2"	53	M	405	53	53	53	53	53
54	71	10' 3"	54	F	410	54	54	54	54	54
55	72	10' 4"	55	M	415	55	55	55	55	55
56	73	10' 5"	56	F	420	56	56	56	56	56
57	74	10' 6"	57	M	425	57	57	57	57	57
58	75	10' 7"	58	F	430	58	58	58	58	58
59	76	10' 8"	59	M	435	59	59	59	59	59
60	77	10' 9"	60	F	440	60	60	60	60	60
61	78	10' 10"	61	M	445	61	61	61	61	61
62	79	10' 11"	62	F	450	62	62	62	62	62
63	80	11' 0"	63	M	455	63	63	63	63	63
64	81	11' 1"	64	F	460	64	64	64	64	64
65	82	11' 2"	65	M	465	65	65	65	65	65
66	83	11' 3"	66	F	470	66	66	66	66	66
67	84	11' 4"	67	M	475	67	67	67	67	67
68	85	11' 5"	68	F	480	68	68	68	68	68
69	86	11' 6"	69	M	485	69	69	69	69	69
70	87	11' 7"	70	F	490	70	70	70	70	70
71	88	11' 8"	71	M	495	71	71	71	71	71
72	89	11' 9"	72	F	500	72	72	72	72	72
73	90	11' 10"	73	M	505	73	73	73	73	73
74	91	11' 11"	74	F	510	74	74	74	74	74
75	92	12' 0"	75	M	515	75	75	75	75	75
76	93	12' 1"	76	F	520	76	76	76	76	76
77	94	12' 2"	77	M	525	77	77	77	77	77
78	95	12' 3"	78	F	530	78	78	78	78	78
79	96	12' 4"	79	M	535	79	79	79	79	79
80	97	12' 5"	80	F	540	80	80	80	80	80
81	98	12' 6"	81	M	545	81	81	81	81	81
82	99	12' 7"	82	F	550	82	82	82	82	82
83	100	12' 8"	83	M	555	83	83	83	83	83
84	101	12' 9"	84	F	560	84	84	84	84	84
85	102	12' 10"	85	M	565	85	85	85	85	85
86	103	12' 11"	86	F	570	86	86	86	86	86
87	104	13' 0"	87	M	575	87	87	87	87	87
88	105	13' 1"	88	F	580	88	88	88	88	88
89	106	13' 2"	89	M	585	89	89	89	89	89
90	107	13' 3"	90	F	590	90	90	90	90	90
91	108	13' 4"	91	M	595	91	91	91	91	91
92	109	13' 5"	92	F	600	92	92	92	92	92
93	110	13' 6"	93	M	605	93	93	93	93	93
94	111	13' 7"	94	F	610	94	94	94	94	94
95	112	13' 8"	95	M	615	95	95	95	95	95
96	113	13' 9"	96	F	620	96	96	96	96	96
97	114	13' 10"	97	M	625	97	97	97	97	97
98	115	13' 11"	98	F	630	98	98	98	98	98
99	116	14' 0"	99	M	635	99	99	99	99	99
100	117	14' 1"	100	F	640	100	100	100	100	100

















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APPENDIX B  
ADDITIONAL THREE YEARS  
COMPARED WITH  
ADDITIONAL FOUR YEARS

Key:

A, B, C, D = four cells on a 2 x 2 contingency table

Rankin is followed by "L" = 1 of outcome [low income]

Rankin is followed by "H" = 2 of outcome [high income]

$\chi^2$  = the chi-square test statistic (shows the statistical  
value at the .05 level when df = 1 in 2 df)

Fisher = the Fisher exact probability

Tobias = the exact probability with the Tobias Modification

----- = not applicable



Time sec	$\frac{1}{2}V$ mV	$\frac{1}{10}V$ mV	Cap pF	Mod mV	$\frac{1}{2}V$ mV	$\frac{1}{10}V$ mV	Factor	Modul Ratio	Scale Number	Signal level at 100 sec. hold time
00	75	00	00	00	00	00	0.00000	.....	.....	.....
01	75	00	00	00	00	00	.....	.....	.....	.....
02	75	00	00	00	00	00	.....	.....	.....	.....
03	75	00	00	00	00	00	.....	.....	.....	.....
04	75	00	00	00	00	00	.....	.....	.....	.....
05	75	00	00	00	00	00	.....	.....	.....	.....
06	75	00	00	00	00	00	.....	.....	.....	.....
07	75	00	00	00	00	00	.....	.....	.....	.....
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09	75	00	00	00	00	00	.....	.....	.....	.....
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64	75	00	00	00	00	00	.....	.....	.....	.....
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82	75	00	00	00	00	00	.....	.....	.....	.....
83	75	00	00	00	00	00	.....	.....	.....	.....
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85	75	00	00	00	00	00	.....	.....	.....	.....
86	75	00	00	00	00	00	.....	.....	.....	.....
87	75	00	00	00	00	00	.....	.....	.....	.....
88	75	00	00	00	00	00	.....	.....	.....	.....
89	75	00	00	00	00	00	.....	.....	.....	.....
90	75	00	00	00	00	00	.....	.....	.....	.....
91	75	00	00	00	00	00	.....	.....	.....	.....
92	75	00	00	00	00	00	.....	.....	.....	.....
93	75	00	00	00	00	00	.....	.....	.....	.....
94	75	00	00	00	00	00	.....	.....	.....	.....
95	75	00	00	00	00	00	.....	.....	.....	.....
96	75	00	00	00	00	00	.....	.....	.....	.....
97	75	00	00	00	00	00	.....	.....	.....	.....
98	75	00	00	00	00	00	.....	.....	.....	.....
99	75	00	00	00	00	00	.....	.....	.....	.....
100	75	00	00	00	00	00	.....	.....	.....	.....



Expenditure at  
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Expenditure at 1st or 2nd year



[illegible]

[illegible]



Case No.	Age	Height	Weight	Temp	Pulse	Respir.	Blood Pressure	Specific Gravity of Urine
1	23	5' 10"	160	99.6	88	18	110/70	1.020
2	23	5' 10"	160	99.6	88	18	110/70	1.020
3	23	5' 10"	160	99.6	88	18	110/70	1.020
4	23	5' 10"	160	99.6	88	18	110/70	1.020
5	23	5' 10"	160	99.6	88	18	110/70	1.020
6	23	5' 10"	160	99.6	88	18	110/70	1.020
7	23	5' 10"	160	99.6	88	18	110/70	1.020
8	23	5' 10"	160	99.6	88	18	110/70	1.020
9	23	5' 10"	160	99.6	88	18	110/70	1.020
10	23	5' 10"	160	99.6	88	18	110/70	1.020
11	23	5' 10"	160	99.6	88	18	110/70	1.020
12	23	5' 10"	160	99.6	88	18	110/70	1.020
13	23	5' 10"	160	99.6	88	18	110/70	1.020
14	23	5' 10"	160	99.6	88	18	110/70	1.020
15	23	5' 10"	160	99.6	88	18	110/70	1.020
16	23	5' 10"	160	99.6	88	18	110/70	1.020
17	23	5' 10"	160	99.6	88	18	110/70	1.020
18	23	5' 10"	160	99.6	88	18	110/70	1.020
19	23	5' 10"	160	99.6	88	18	110/70	1.020
20	23	5' 10"	160	99.6	88	18	110/70	1.020
21	23	5' 10"	160	99.6	88	18	110/70	1.020
22	23	5' 10"	160	99.6	88	18	110/70	1.020
23	23	5' 10"	160	99.6	88	18	110/70	1.020
24	23	5' 10"	160	99.6	88	18	110/70	1.020
25	23	5' 10"	160	99.6	88	18	110/70	1.020
26	23	5' 10"	160	99.6	88	18	110/70	1.020
27	23	5' 10"	160	99.6	88	18	110/70	1.020
28	23	5' 10"	160	99.6	88	18	110/70	1.020
29	23	5' 10"	160	99.6	88	18	110/70	1.020
30	23	5' 10"	160	99.6	88	18	110/70	1.020
31	23	5' 10"	160	99.6	88	18	110/70	1.020
32	23	5' 10"	160	99.6	88	18	110/70	1.020
33	23	5' 10"	160	99.6	88	18	110/70	1.020
34	23	5' 10"	160	99.6	88	18	110/70	1.020
35	23	5' 10"	160	99.6	88	18	110/70	1.020
36	23	5' 10"	160	99.6	88	18	110/70	1.020
37	23	5' 10"	160	99.6	88	18	110/70	1.020
38	23	5' 10"	160	99.6	88	18	110/70	1.020
39	23	5' 10"	160	99.6	88	18	110/70	1.020
40	23	5' 10"	160	99.6	88	18	110/70	1.020
41	23	5' 10"	160	99.6	88	18	110/70	1.020
42	23	5' 10"	160	99.6	88	18	110/70	1.020
43	23	5' 10"	160	99.6	88	18	110/70	1.020
44	23	5' 10"	160	99.6	88	18	110/70	1.020
45	23	5' 10"	160	99.6	88	18	110/70	1.020
46	23	5' 10"	160	99.6	88	18	110/70	1.020
47	23	5' 10"	160	99.6	88	18	110/70	1.020
48	23	5' 10"	160	99.6	88	18	110/70	1.020
49	23	5' 10"	160	99.6	88	18	110/70	1.020
50	23	5' 10"	160	99.6	88	18	110/70	1.020

Signal Frequency  
of  
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Signal Frequency of Station

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[illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099





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March, 1946

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